The NATIONAL GEOGRAPHIC MAGAZINE

Vol. XIX JUNE, 1908 No. 6

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ONE SEASON'S GAME-BAG WITH THE CAMERA

By Hon. GEORGE SHIRAS, 3rd

WITH SEVENTY ILLUSTRATIONS

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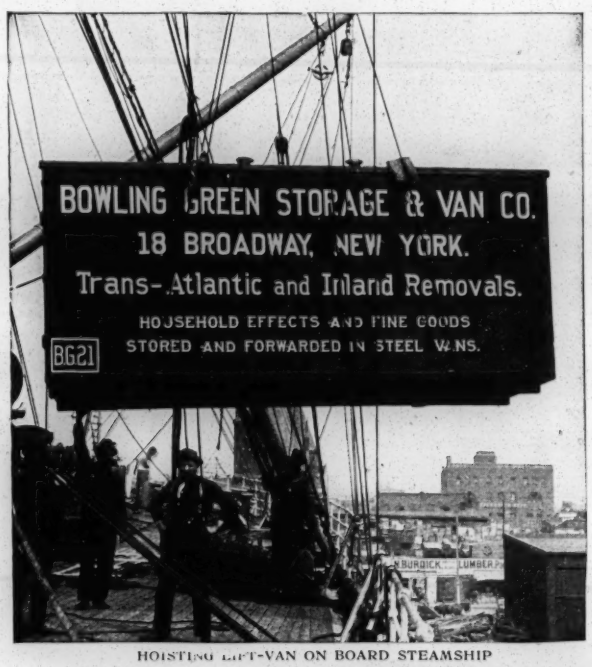
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VOL. XIX, No. 6 WASHINGTON JUNE, 1908

THE NATIONAL GEOGRAPHIC MAGAZINE

ONE SEASON'S GAME-BAG WITH THE CAMERA*

BY HON. GEORGE SHIRAS, 3RD

Mr Shiras' achievements with the camera and the flashlight have encouraged many big-game hunters and field naturalists to adopt these methods of pursuing or studying wild life. When serving as a member of Congress Mr Shiras devoted much time to preparing or advocating measures designed to permanently conserve the birds, animals, and fish of our country. One bill putting under Federal control the migratory wild fowl and another extending governmental supervision over fish in the tidal waters, the Great Lakes, and interstate rivers, have received the hearty approval of the leading game and fish protective associations in the United States and Canada, while the author's extensive brief in support of such constitutional power has met with the approbation of many leading jurists and lawyers. Within the next year active steps will be taken to have these bills enacted into law.—EDITOR

ABOUT two years ago the writer contributed an article to the NATIONAL GEOGRAPHIC MAGAZINE upon "Photographing Wild Game with Camera and Flashlight,"† the purpose of which was to show what an admirable substitute the camera is for the gun in the skillful pursuit of wild life and in the capture of trophies much more enduring and attractive to the hunter, his friends, or the public, than where the animal or bird paid the forfeit of its life in the game of hide and seek.

The old doctrine of the frontiersman, trapper, explorer, or remote homesteader, that the edibility of certain wild creatures justified their destruction, was and is still a rational one, when we consider how human life has been sustained or the otherwise limited larder of those in the wilderness bountifully varied by the moderate taking of game animals and birds. To a considerably less degree we may ascribe some reason to the thrifty market hunter who turns his ducks into dollars or moose meat into money, since he seldom kills or abandons a mountain of flesh for the sake of a pair of antlers or for the temporary gratification of an accurately placed bullet in an animal so tough or so remote from civilization that its flesh cannot be utilized.

But how about the modern sportsman who hunts for the love of sport and the freedom that comes with a trip into the wilderness? Are the antlers of an abandoned and festering stag to be recognized as a trophy of unsullied honor,

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†With 72 illustrations, July, 1906.

while the blood-flecked coin of the market hunter is to be regarded as the token of sordidness?

When fagged, overcivilized, not to say overfed, man seeks the solitude of the forest, he goes neither in search of food nor from a barbaric desire to see gaping wounds and a pitiful death struggle of some mighty beast. The exhilaration and the delightful freedom of the wilderness, with an opportunity to pit man's dexterity and resourcefulness against the experience, strategy, and inherent cunning of the hunted, accounts in these later days for many an unnecessary tragedy in the woods.

A tithe of what one spends in time and travel will supply the household with flesh or fowl that is generally superior to the game sought, or one can buy at half the cost the skins or horns that later may adorn the home as a result of the hunting trip.

Every decent sportsman who now hunts big game in particular, and many of those who seek a smaller quarry, are moved by qualities directly opposed to needless suffering or useless slaughter; and it is unfortunate that to many of these the peep-sights of a rifle must continue to circumscribe their vision. Some time it will be recognized that, when the camp is abundantly supplied with wild food, the camera, and the camera alone, should be the means of further hunting; for skill, not kill, is the motive, except in the predaceous class, like the wolf, the cougar, or the crow.

THE CAMERA DISPLACING THE SPORTSMAN'S GUN

From his accurate knowledge of wild life and under the prestige and authority of his high office, President Roosevelt has done more to permanently conserve the wild animals and birds of this country than any man now living. The setting aside, under executive order, of a great many game refuges and dozens of islands as breeding places for wild fowl and sea birds—on the coasts, on the Great Lakes, and in the distant waters of Hawaii—has led to remarkable results and will save many a rare creature now verging on extinction. Originally an intrepid pioneer, who only collected a fair toll in a fair way from the hills and plains near his western ranch, he has not in the past 14 years killed a single harmless wild animal, confining his brief trips to a study of the fauna of the Yellowstone Park, or to participating in lively chases after the wolf, the bear, the lynx, or the cougar, whose destructiveness have put them in the "predatory" class of which we have heard so much of late.

The President many years ago wrote the following as an introductory to a book of wild life illustrated with the camera:

"I desire to express my sense of the good which comes from such books, and from the substitution of the camera for the gun. The older I grow, the less I care to shoot anything but 'varmints.' * * * If we can only get the camera in place of the gun and have sportsman sunk somewhat in the naturalist and the lover of wild things, the next generation will see an immense change for the better in the life of our woods and waters."

And this is the man, who for many years has killed no innocent thing, and who, sportsman originally as he was, has become the leader in the preservation of wild life and in the advocacy of those means for best studying and enjoying it, that has been pointed out as one not now in "sympathy" with present nature fakers or their well-meaning but deluded followers!

It is only in recent years that the quick plate, rapid shutter and lens have made possible successful hunting with the camera, and even then it has required time to show the extensive field, the fascinating character of the pastime, and the sentimental and practical features involved in this method of studying and picturing wild life.

Although the writer was an ardent hunter from early youth, and pursued in the most relentless way those varieties of birds and animals whose cunning and whose conquest made them worthy of the name of "game," it must not be assumed that he, with the usual zeal of a convert, now indiscriminately decries the man with the gun; for, under proper conditions and in moderation the tenant in the wilderness camp is entitled to his

share of nature's bounty; nor is the writer in accord with the paved-street nature lovers who would sanctify as God's creatures the wild deer and the wild sheep, and yet see no inconsistency when entering an indignant protest if, forsooth, a joint of lamb is tough, simply because the little creature's gambols in the spring were too prolonged!

In the previous article, already referred to, the writer used, so far as possible, illustrations intended to show the wide scope of camera hunting, ranging from the gigantic bull moose to the bull-frog; the graceful deer to the tiny deer mouse; the sleeping bird upon the nest to the rapid flight of wild fowl speeding seventy-five miles an hour before the blind. Then, too, it was shown that all is game to the camera, irrespective of edibility; that you can still hunt your game—shoot it on the wing; set your camera out like traps; hunt any season of the year, in daylight or in darkness; have admission to lands closed to the man with the gun, and never be limited by law or custom in the size of your game-bag.

The fact that the taking of these pictures covered a period of more than twenty years has led the writer to prepare the present article. Many previous readers reached the conclusion that wild game photography was so difficult and uncertain that while it was possible for a few persons devoting half a lifetime to such a pastime to gather together an interesting collection of pictures, yet to the ordinary sportsman or amateur photographer the prospects of getting satisfactory results in the vacation periods of each year were too remote for their consideration.

Therefore the present illustrations are selected from among two hundred and fifty photographs taken within the past year, or, to be more precise, from April 9, 1907, to April 1, 1908, and represent four trips in which the camera was in use a total of thirty days, aside from the time of reaching the game fields.

WHERE THE AUTHOR "HUNTED" THE PAST YEAR

Having had a permanent or base camp every year since a boy on the south shore of Lake Superior, much of my big-game hunting with the rifle or camera has been in the middle West or central Canada; but in the present instance, with few exceptions, the photographs represent two extremes on the Atlantic coast. One trip, in April of last year, was to an isolated coral reef, called Cay Verde, belonging to the Bahama group and situate about 230 miles south of Nassau, where we located the only large, and possibly the only existing, breeding colonies in eastern waters of the man-o'-war birds and boobies; another expedition, in July, was made to New Brunswick after moose and deer, while later in the season the Gulf of Saint Lawrence was revisited and crossed to the Island of Newfoundland to picture the fall migration of the caribou; and the fourth and final trip was made this spring, to Florida waters, for a further study of the brown pelicans, and other local birds. As will be noted, no distinction was made between game and non-game animals and birds in these recent expeditions.

AN EXCITING VOYAGE IN WEST INDIA WATERS

In company with Mr Frank M. Chapman, the well-known ornithologist, the voyage to Cay Verde was made from Miami in the trim little schooner yacht *Physalia,* of the Carnegie Institution of Washington, and under the command of that experienced navigator and naturalist Dr. A. G. Mayer, director of the Dry Tortugas Laboratory. At first sight the *Physalia* seemed small and low in the water for a thousand-mile trip in the Bahamas. It was fifty-five feet over all, with a graceful and extended overhang in the bow and stern that reduced the keel measurement to only twenty-five feet. The draft was five feet and the main deck about three feet above the water line. The masts, however, were long and very massive; but, alas, several days later these selfsame masts became an additional source of danger, as the little yacht, lying on her beam's ends in a fearful gale, was endeavoring to recover her equilibrium. In addition to the sails, there was a twenty horse-power gasoline engine for use in making diffi-

cult harbor entrances or fighting against the treacherous tides of the Bahama Banks.

The voyage across the Gulf Stream to Nassau and the first day's run south from that port was interesting but uneventful. On the second day, April 1, 1907, conditions changed, when a heavy head wind was encountered from the south, displacing the customary easterly trade winds. For hours the yacht tacked back and forth in a futile contest with wind and waves, for going to windward was not the *Physalia's* strong point. At 4 p. m. the anchor was dropped on the north side of a narrow reef lying east and west, which promised fair shelter for the approaching night; but at this very moment the destructive hurricane of April 1 had just struck Nassau, fifty miles to the north, and was tearing its way against the southern gale, which we were contentedly watching as it sent the spray high over the reef in front of us.

The barometer, however, had begun to fall and, not liking the looks of the weather, with ominous thunder clouds gathering, another anchor was dropped overboard, only to find ourselves struggling at the windlass half an hour later to pull them back again, as the hurricane came from the north while the tumultuous waves threatened to pull the bow under, held as it was with double chains, or later drive us back upon the reef when anchor free.

As the second anchor came aboard, the yacht responded quickly to the wind, and in passing out struck a sunken bar of sand or silt, hanging just long enough for a huge wave to sweep the decks and flood the engine-room, stopping the motor, upon which we were relying until a small sail could be reefed. The next wave carried us clear, and in a few minutes the engine was again running, and then began a struggle to clear some long, low islands ahead which could be dimly seen in the gathering darkness. This required us to run at right angles to the gale, in the trough of the sea, and then it was that the huge masts laid us over again and again, tearing the life-boats from the davits and upsetting things generally.

Darkness now came on, accentuated by flashes of lightning, and after a run of half an hour it was hoped we had cleared the islands to the left; so, to the partial relief of all, the rapidly foundering yacht was turned free with the wind, and then commenced an all-night's run through a network of coral reefs and shallow bars which for six hundred miles formed the easterly fringe of the Bahama Banks. The night being impenetrable, no lookout was placed at the bow, but every minute or two the lead was thrown, and when occasionally the Swede mate called out "Vun faddom," we knew that but a single foot of water lay between the keel and some jagged reef. But here I shall omit the suspense of the next four hours.

At midnight the gasoline tank broke and the little cabin was flooded with gallons of volatile oil. With a rush all the lamps were extinguished, including the binnacle light, illuminating the deck compass, and just in time to prevent sudden annihilation. The possession of a little electric pocket-lamp made it possible to see the wheelman's compass until, after an hour's effort, with a barricade of canned goods carried from the hold to the deck, we succeeded, in the howling gale, in lighting a marine lantern.

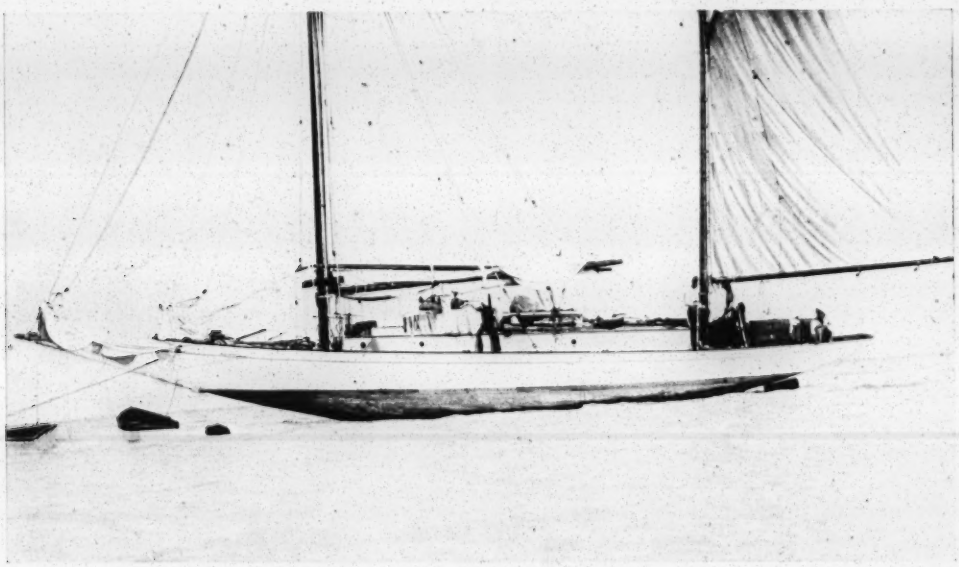
At 4:30 a. m., in the first gleam of the coming light, the pilot made out a high and rocky island a quarter of a mile to the east, and in a few minutes he skillfully guided us into a narrow entrance of Upper Gold Ring Key, ninety-one miles away from the anchorage of the night before. Here, in a spirit of thankfulness, we remained for two days, until the gale passed away, repairing the broken life-boats and pumping out the gasoline from the bilge, during which time we cooked our meals on the shore of the key, for the yacht was still filled with the sickening and dangerous fumes of gasoline. And how bright and lovely those scarred rocks and tangled thickets seemed! On board everything was thoroughly drenched except our precious plates, which fortunately had been put up in water-tight tin cans.

XUM

WRECKERS EYEING THE PHYSALIA WITH INTEREST

It may be remarked that this was the first hurricane at such an early date for nearly twenty years, and, with a wind pressure of more than eighty miles an hour, it beached, sunk, or dismantled a large number of vessels at Nassau and in our vicinity.

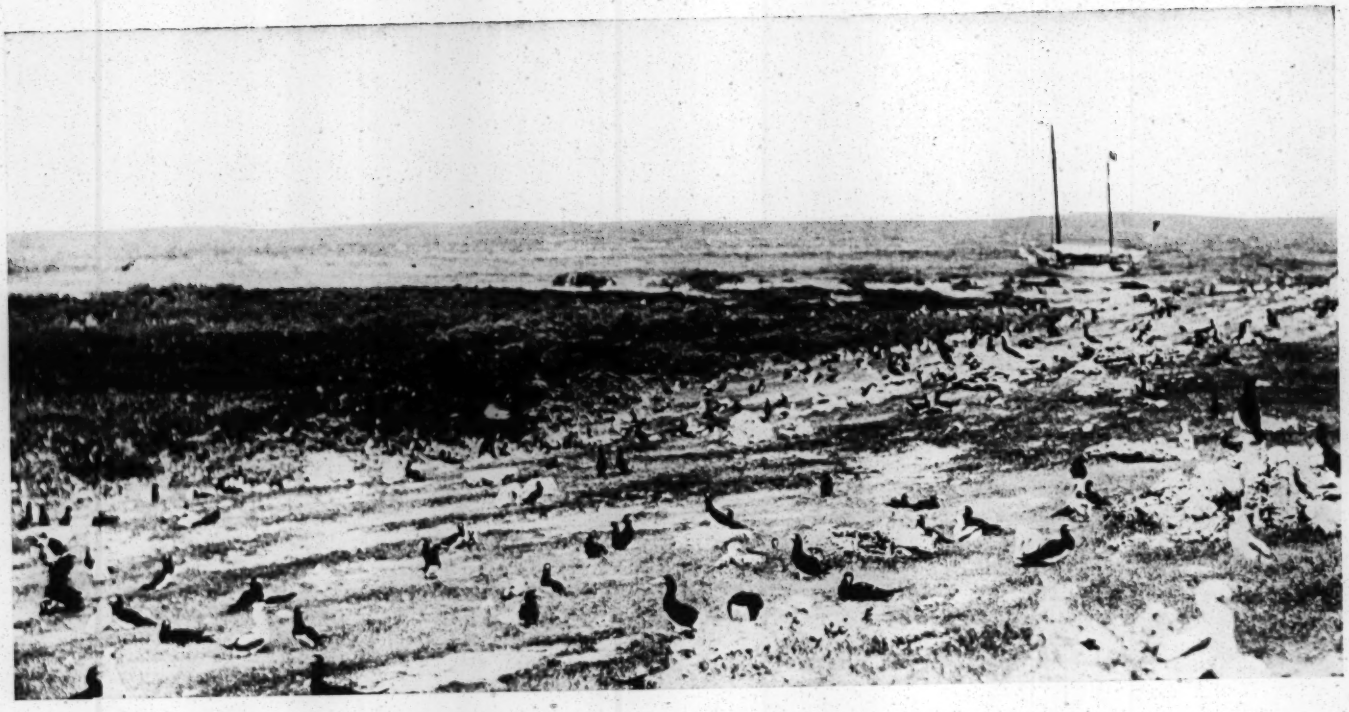
But let no inexperienced one suppose that this unusual adventure of the *Physalia* is typical of life on the sea, or that he who seeks the remote forests or the open waters is leading a life of danger and of hardship, for the dangers of the crowded city far exceed in number and variety those of the former. "The perils



THE PHYSALIA ON A REEF (SEE PAGE 402)

CURLY TAILED LIZARD, CAY VERDE

RESTING AFTER THE HURRICANE ON UPPER GOLD RING KEY: AN ABANDONED NEGRO HUT



GENERAL VIEW OF BOOBY AND MAN-O'-WAR COLONIES

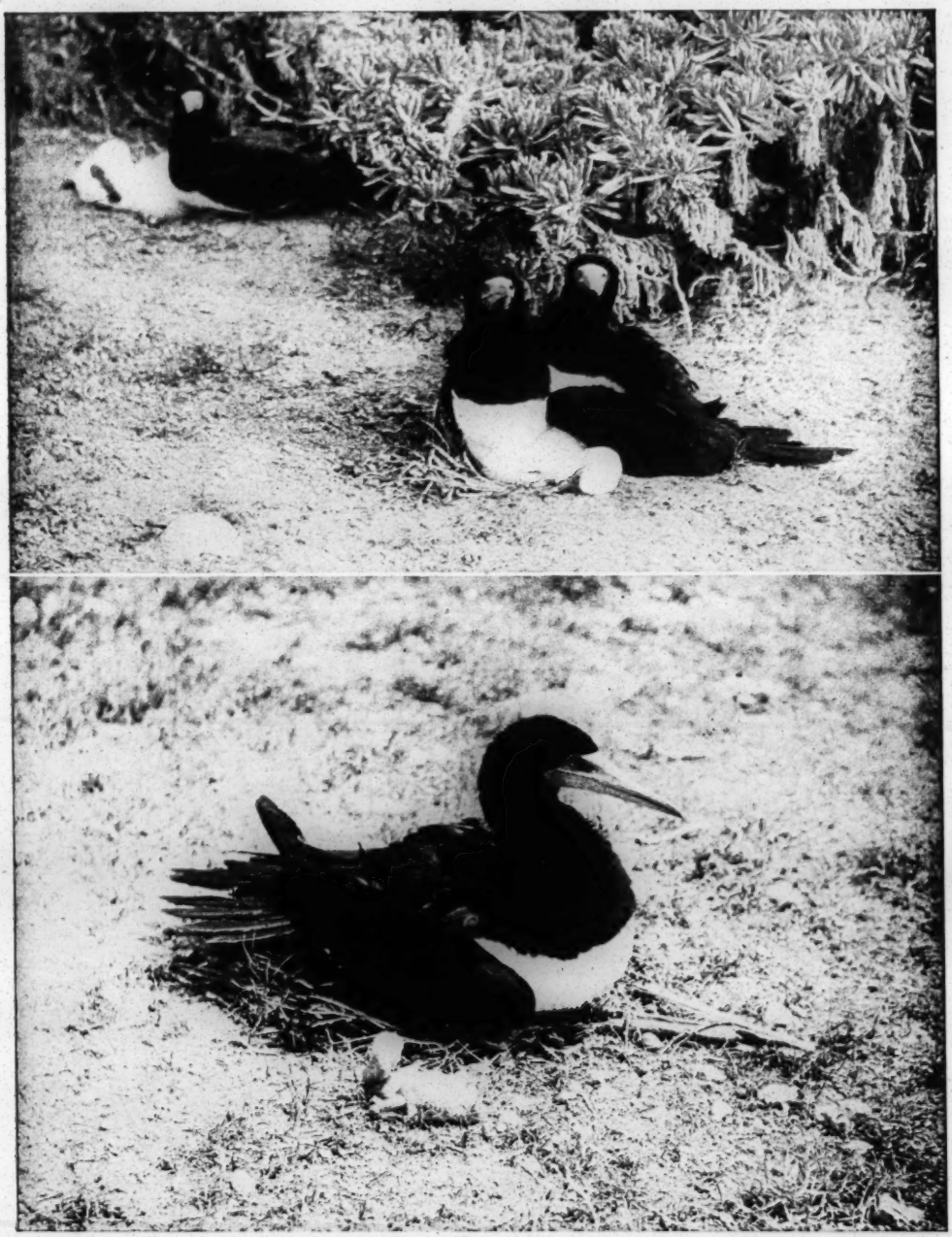
The latter in the dark cactus thicket in the left foreground; *Physalia* at edge of the surf. The man-o'-war birds are pirates among birds, obtaining much of their food from the stupid boobies, without whom they probably could not live on this island (see page 400).

BOOBIES ON CORAL CLIFF, 75 FEET ABOVE THE SEA, ONE OF THE HIGHEST CORAL CLIFFS IN THE BAHAMAS

The booby or black gannet is a maritime bird found on both oceans, with a range on the Atlantic coast confined to tropical and sub-tropical America. It inhabits lonely islets and in flight resembles both the cormorant and the gull, but in fishing strikes the water at a low angle, emerging against the wind. The adult has a white breast and the rest of the body is a beautiful soft, dark brown; the young are white at first, shading gradually into gray and the final brown of the parents. The feet are webbed, of yellowish hue, and the odd wedge-shaped bill is a green-yellow or a pink-yellow, according to sex. When approached closely they bow in a dignified manner and manifest great affection for their young.

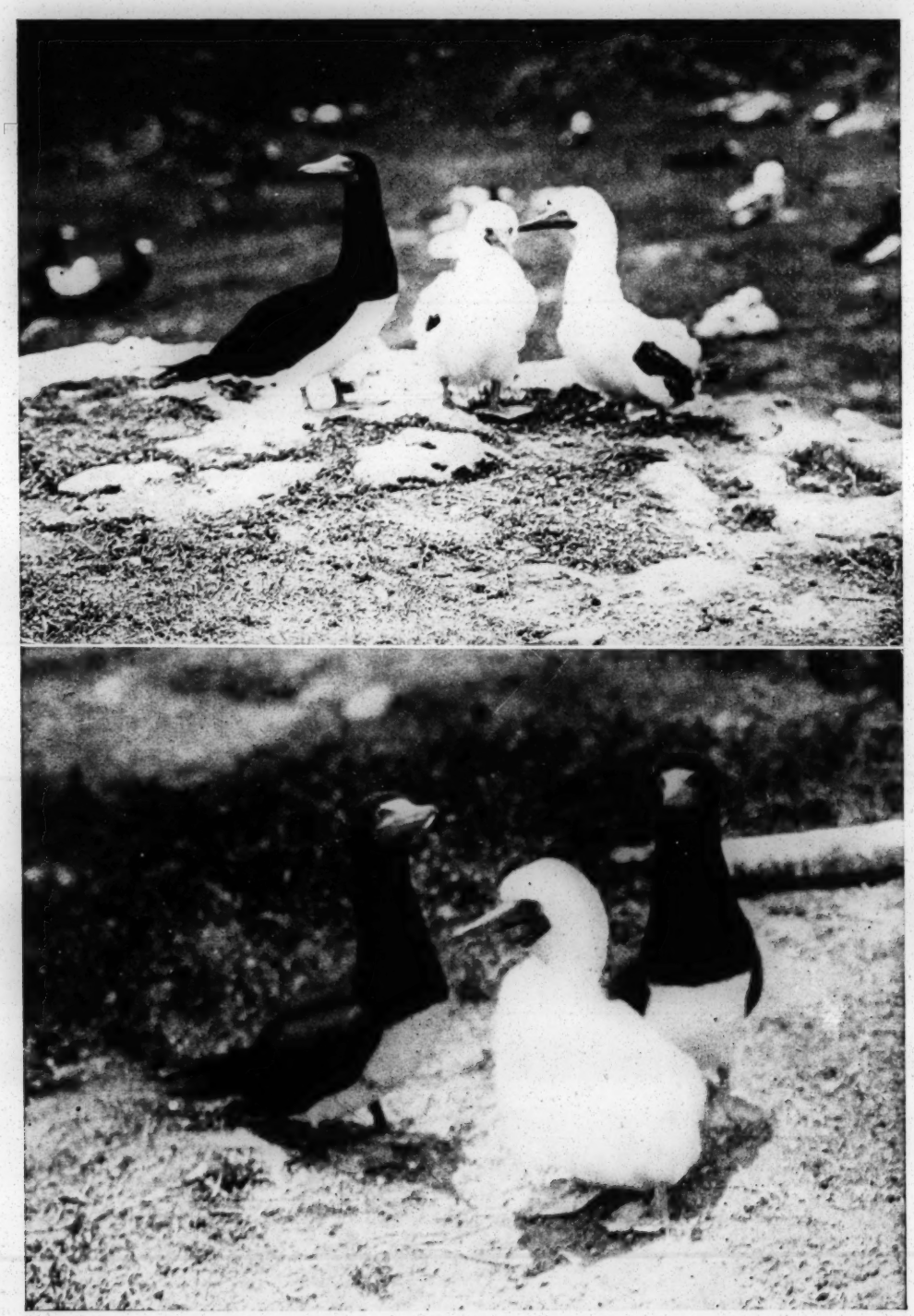
WESTERN PART OF THE BOOBY COLONY, ON THE ELEVATED PORTION OF THE ISLAND

The white bird is the young and the black the adult



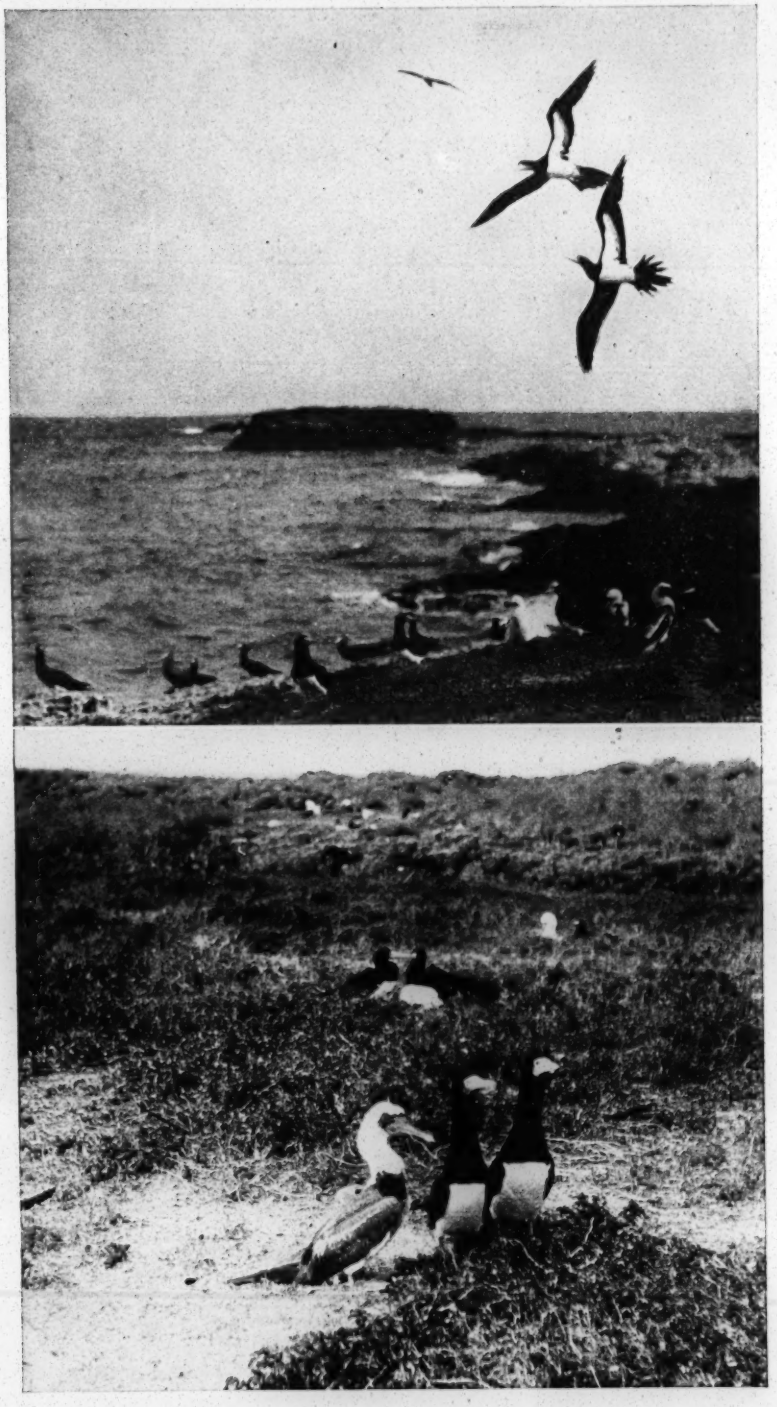
PARENT BOOBIES COVERING YOUNG FROM DIRECT SUN HEAT OF 130 DEGREES

NESTING BOOBY: WITH YOUNG DISPLACED IN FOREGROUND



ONLY YOUNG TWIN BOOBIES NOTICED IN 700 NESTS

THE PARENT BOOBIES STAND GUARD ON EITHER SIDE NIGHT AND DAY, EXCEPT WHEN SEARCHING FOR FOOD



BOOBIES IN FLIGHT: NOTE FAN-TAILS

YOUNG BOOBY IN FINAL GRAY PLUMAGE JUST BEFORE CHANGING TO ADULT

MAN-O'-WAR BIRDS SOARING 100 YARDS OVERHEAD ON MOTIONLESS WINGS

of the deep" is a most misleading phrase. It is the peril of the shallows, of the reefs, of the fog-bedimmed coast, that makes navigation sometimes dangerous and uncertain. Not too much wind, however great, but too little water, is the cause of nearly every disaster upon the sea.

The loss of all the gasoline except a few gallons remaining in the bottom of the ruptured tank delayed the expedition many days, and instead of a return to Nassau within a week, nearly a month elapsed before the trip was over.

The following week, a hundred miles farther south, we spent several days at Ragged Island awaiting favorable conditions for visiting Cay Verde, more than thirty miles out of sight of land to the east and upon which a landing could only be made when a light wind prevailed, for calm days were now unavailable, with the gasoline practically gone, and heavy winds meant insurmountable breakers rolling in upon the small sand beach at Cay Verde.

Finally, on April 8, with a light head wind, the *Physalia* slowly tacked its way toward our goal, and late in the afternoon, when within three miles of this little island, the wind died out and it became necessary to use several gallons of the remaining gasoline in order to make a landing before dark; and a fortunate move it was, for the next day a heavy wind prevailed and would have prevented landing upon or departure from the reef.

But miles away and long before the boats were launched and loaded we had been anxiously eying the reef for signs

BREEDING COLONY OF MAN-O'-WAR BIRDS

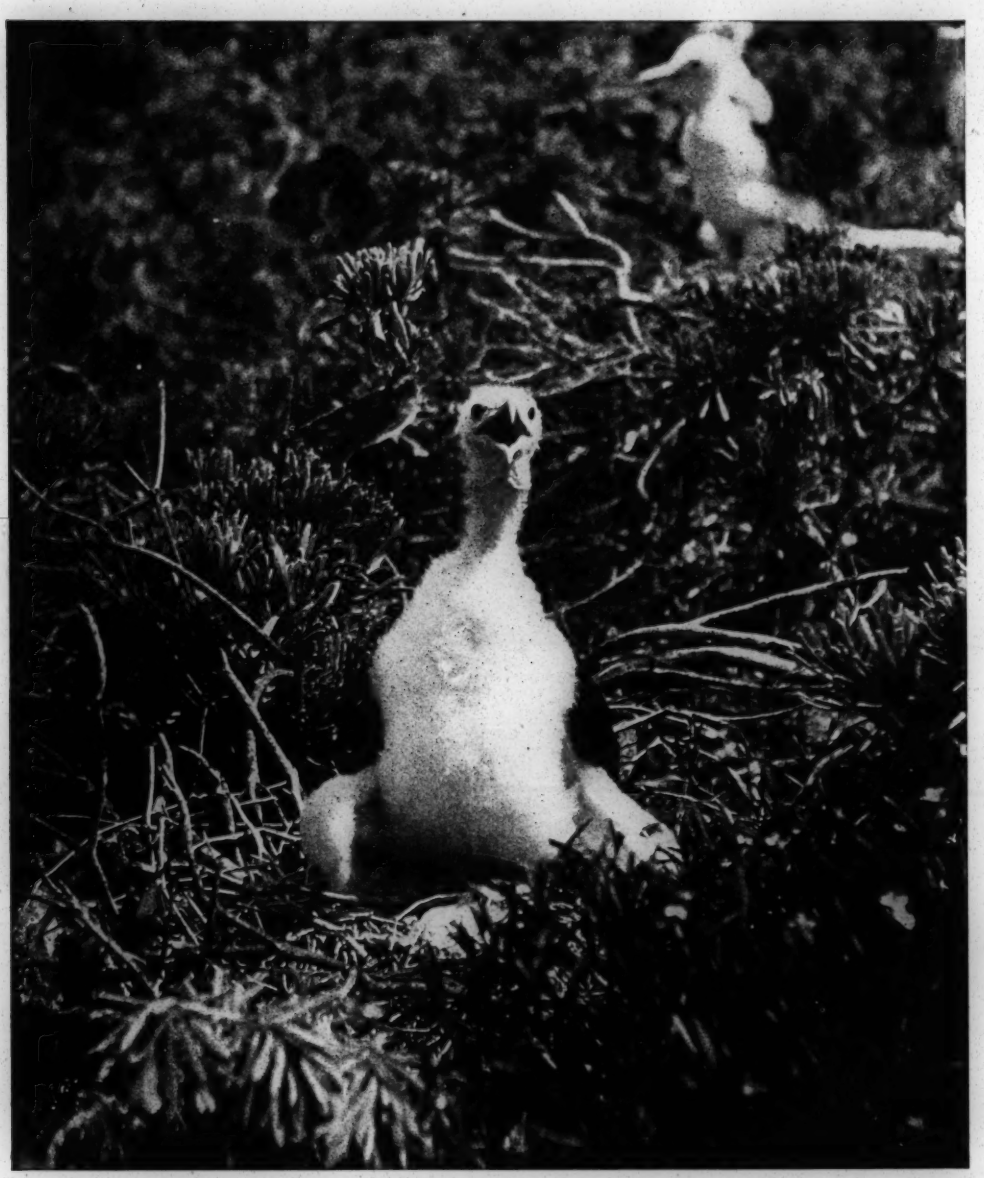
Old black bird on nest and young white birds scattered through thicket. The nests are built on sea-grape bushes surrounded by impenetrable cactus

of bird life. Our data was not at all encouraging, since such as we had only established the existence of bird colonies in 1857 and 1896. Whether the birds had been there this season or, if so, had been broken up by the rather unusual visit from some becalmed ship, we did not know.

Schooners carrying fifteen or twenty dories and a crew of twenty or more negroes are continuously searching the shallow waters of the Bahamas for sponges, and, as might be expected, have from time immemorial made a practice of landing upon islands for birds' eggs and their young and, when possible, taking the breeding birds themselves, with the result that in recent years bird life in the Bahamas is threatened with extinction. Some of the readers may recall Mr Chapman's efforts, covering three seasons, to locate on these islands a breeding colony of the beautiful pink flamingo, and how at last he succeeded, after discovering a breeding site many miles in the interior, on a large marshy island and so remote as to have escaped the vigilant eyes of the watchful natives.

The extreme isolation of Cay Verde and the absence of protecting land in the neighborhood make the landing too uncertain to warrant a trip that far in search of eggs or young.

However, as the yacht approached a little nearer we noticed high over the island the graceful, soaring flight of several man-o'-war birds, and later could see, coming from all directions, small numbers of boobies, bringing in their pouch the evening meal for their clamorous offspring, provided they were not intercepted in mid-air and compelled to disgorge for the benefit of that hawk of the sea, the man-o'-war bird, whose diet consists wholly of flying fish or the toll collected from the good-natured boobies, the presence of which alone makes possible a certain supply of fish for the young of its piratical neighbor.



YOUNG MAN-O'-WAR BIRD AT CLOSE RANGE

The man-o'-war or frigate bird belongs to the inter-tropical seas. They have a greater expansion of wing in proportion to the weight of the body than any other bird, and in power of flight are unsurpassed, soaring for hours at a great height, often far out at sea. They live on flying fish or by robbing the boobies, gulls, and terns. The long, narrow, powerful bill has at the end a horny hook, in appearance and substance like a talon, while the feet, from lack of use, are small and atrophied. The male is a brilliant black and has a concealed pouch of red skin which, when inflated, resembles a toy balloon; the female is brownish black with a splotched breast of white. The single young is white with black wings, and always stands erect in the nest.

Just as the tropical sun was sinking, the *Physalia* crossed the crimson sheen and dropped anchor off the pretty little sand beach mortised in between black and jagged battlements of æolian rock, which in broken masses circled the rest of the island. Quickly a large cask of water and a box of provisions were sent ashore for use, in case we were marooned by the forced withdrawal of the yacht under stress of weather, and later disembarking with our cameras, we landed for a three days' visit. A shelter for the night was made from an old sail supported by our tripods, and then Dr Mayer returned to the rolling vessel with a calm and satisfied demeanor, while we secretly rejoiced at having solid ground beneath our blankets, hard as it was.

In the fading light Mr Chapman and I stood by the little tent, gazing with curiosity and pleasure upon thousands of dark-colored boobies, who in stolid silence stood upright on either side of their single white-plumaged young, many of them not ten feet away from the edge of the tent, while still farther away we could see the circling man-o'-war birds descending for the night to nests scattered throughout a low thicket, composed of sea-grape bushes and spiny cactus. At sunrise we were up, and before attempting breakfast made a hasty trip to the higher part of the island and with field-glasses carefully studied the birds, mapping out our plan of action.

Our investigation then and later showed the island to be about thirty acres in extent and containing more than 4,000 ground-nesting boobies and five or six hundred man-o'-war birds in the sea-grape thicket, each colony in the midst of its nesting season. The pictures and subjoined text will tell without further words just what the camera saw, though the remarkable fact may be stated that while the booby nests usually contained two eggs, we were unable to find more than one pair of young in any of the hundreds of nests examined—due, as we discovered, to the peculiar fact that there was a difference of at least ten days in the incubating eggs, and that therefore the first young hatched would alone survive. The man-o'-war birds, on the other hand, lay one egg and, unlike the boobies, the nests are placed far back in the almost impenetrable jungle of cactus.

Several times the *Physalia* changed its anchorage, as heavy winds came on and on one night in particular we were much alarmed when in the midst of a violent thunder-storm the lights upon the *Physalia* disappeared, occasioned, as we discovered on the next day, by the violent rocking of the vessel. At the end of the third day our work was done, including the taking and preparation by Mr Chapman of a splendid group of both variety of birds for the American Museum of Natural History; and then began the slow journey back to Nassau. Delays were numerous, but none were serious until the night of April 16, when for the only time, aside from the night of the hurricane, we attempted a several hours' run with a fair wind and a full moon, in order to reach Nassau next day if possible, where and when the last steamer of the season left for Miami. At 11 p. m. the yacht suddenly stopped, the masts shook violently, the sails flapped, and behold—we were upon a reef, at high tide, a mile out of our course, through the treacherous currents of these broken waters.

At daybreak, when the tide was low, we found ourselves perched on a sand bar in six inches of water, with a deep channel on either side. The wind remained light and with a large island a mile to the east the boat alone was in danger should the wind increase. Here we remained three days, working like beavers at the windlass in an effort to drag the yacht into deep water, but not until the boat was stripped of all her ballast, provisions, anchors, etc., did we succeed in getting her off, in high water, at midnight of the third day; and, as an example of our former good luck, it may be stated that the bar we struck lay just ten miles south of where we began the all-night run on the night of April 1st. The next day we reached Nassau, too late, of course, for the Miami boat, and were compelled to return by water to New York on a Ward line steamer.

MALE AND FEMALE MAN-O'WAR BIRDS FLYING OVER SEA GRAPE THICKET: NOTE WING ACTION AND FORKED TAILS

FIVE NESTS OF MAN-O'WAR BIRDS IN A RADIUS OF SIX FEET: THIS BIRD HAS BUT ONE YOUNG

MAN-O'-WAR BIRD DESCENDING ON NEST: NOTE REMARKABLE FORWARD WING MOVEMENT

FEMALE MAN-O'-WAR BIRD: SHOWING EXTREME EXTENT OF ITS WING, 8 FEET FROM TIP TO TIP

AFTER MOOSE AND DEER IN NEW BRUNSWICK

During the first week in July, 1907, I spent a pleasant week in New Brunswick hunting moose and deer with the camera and flashlight. Although I had traveled through this famous game country a number of times en route to Newfoundland, previous plans had prevented a visit into its wilds.

In company with Adam Moore, the famous guide, trapper, and woods philosopher, we ascended the Tobique River seventy miles to its head-waters, Nictau Lake. Heavy and almost continuous rains the previous month had kept the banks full, or, as Moore expressed it, at a "logging stage"—a most unusual condition for a mid-summer month. The Upper Tobique is peculiar in that it has no rapids, no falls, and no slack waters, excepting an occasional salmon pool, for some sixty miles; yet it is one of the swiftest streams I have ever attempted to paddle. I say attempted, for the grand rush of this stream, supplemented by unusually high water, made the bow paddle useless, and all our motor power was concentrated in a ten-foot pole shod with steel, which Moore, a giant in stature and avoirdupois, standing aloft in the stern of the canoe, wielded with an expertness and strength that slowly but surely overcame a current against which four paddlers would have succumbed. Aside from a sudden dash from one bank to the other in order to escape water at times too deep for the shoving pole, no paddles were used in the three days taken to ascend the stream.

Did space permit, much might be written on the beautiful scenery, the moose and the deer crossing ahead of us, but beyond the camera range, on the slow contest with the current, or the attractiveness of the camp each night with the appetizing trout that lived to enjoy life until the blazing campfire was the signal for casting the artificial fly across this spring-fed stream.

Two days later, as we entered the narrow connecting creek between Lower and Upper Nictau Lake, Moore, scanning the stream carefully, remarked, "there were plenty of moose in the water today." Although I had hunted moose for many years, I neither observed any disturbance in the muddy bottom nor any tracks upon the bank, having failed to observe that floating here and there upon the current were numerous gray-brown hairs shed by the moose as they fed on the aquatic plants in the adjoining lake. A few minutes later we reached Moore's cabin, situated in a secluded corner, at the lower end, where a view of the entire lake was possible. And here, on the well-cleared bank, with a more or less continuous smudge, we were able to fight the sand fly, black fly, and mosquitoes, and yet be in a position to enter the canoe in a moment should a moose appear.

The next day was dark, warm, and wet, while it fairly rained moose; and their utter disregard of dampness was noticeable from the fact of their wading out in the deeper portions of the lake, where they would go entirely out of sight after the roots of acquatic plants. But the moose is so dark in color and its movements so rapid when chased by a canoe that I refrained from attempting to picture them under such unfavorable conditions.

The following days were more propitious, though showers fell occasionally. Many times during the day we silently paddled along the dark-fringed shores until close enough to a feeding animal to overtake it by rapid paddling after we had been finally discovered. Like all the deer family excepting the antelope, the moose has a poor and undiscriminating eye, depending upon its keen nose and sense of hearing for protection, and therefore when the head was frequently submerged it was not hard to approach with a canoe. During the next five days a dozen or more pictures were taken by this means, several of which are shown in the present article.

But when I returned each afternoon to camp it was only to prepare for a much more exciting camera hunt after darkness shrouded this little lake. At about 9 p. m. smaller lenses were substituted for the large ones used in daylight work, and, entering the canoe with the

jacklight in the bow and the flashlight apparatus in easy reach, we paddled along the dark and silent waters, while the canoe with its single blazing eye, was seeking out some nocturnal denizen along the shore or out in the deeper waters of the many bays.

Until the first night under the jacklight, Adam Moore simply thought camera hunting an interesting but not unusual pastime, for he had studied these animals for many years in the waters and in the forests of his native place. But when, on the first night out, his keen ears detected the wallowing of a moose at the edge of a small bog and later saw its bright, translucent eyes and its massive body, illuminated by the funnel of light from the jack, he grew intensely interested; and when the flash was fired and the great beast struggled about, blinded but not really alarmed, by what was taken to be a flash of lightning, Moore laughed long and loud. Every night thereafter he was the first in the canoe and impatient for the start. Here again the pictures must largely tell their story, for space forbids a detailed account of the many exciting scenes during the daylight and night bombardment of the New Brunswick moose.

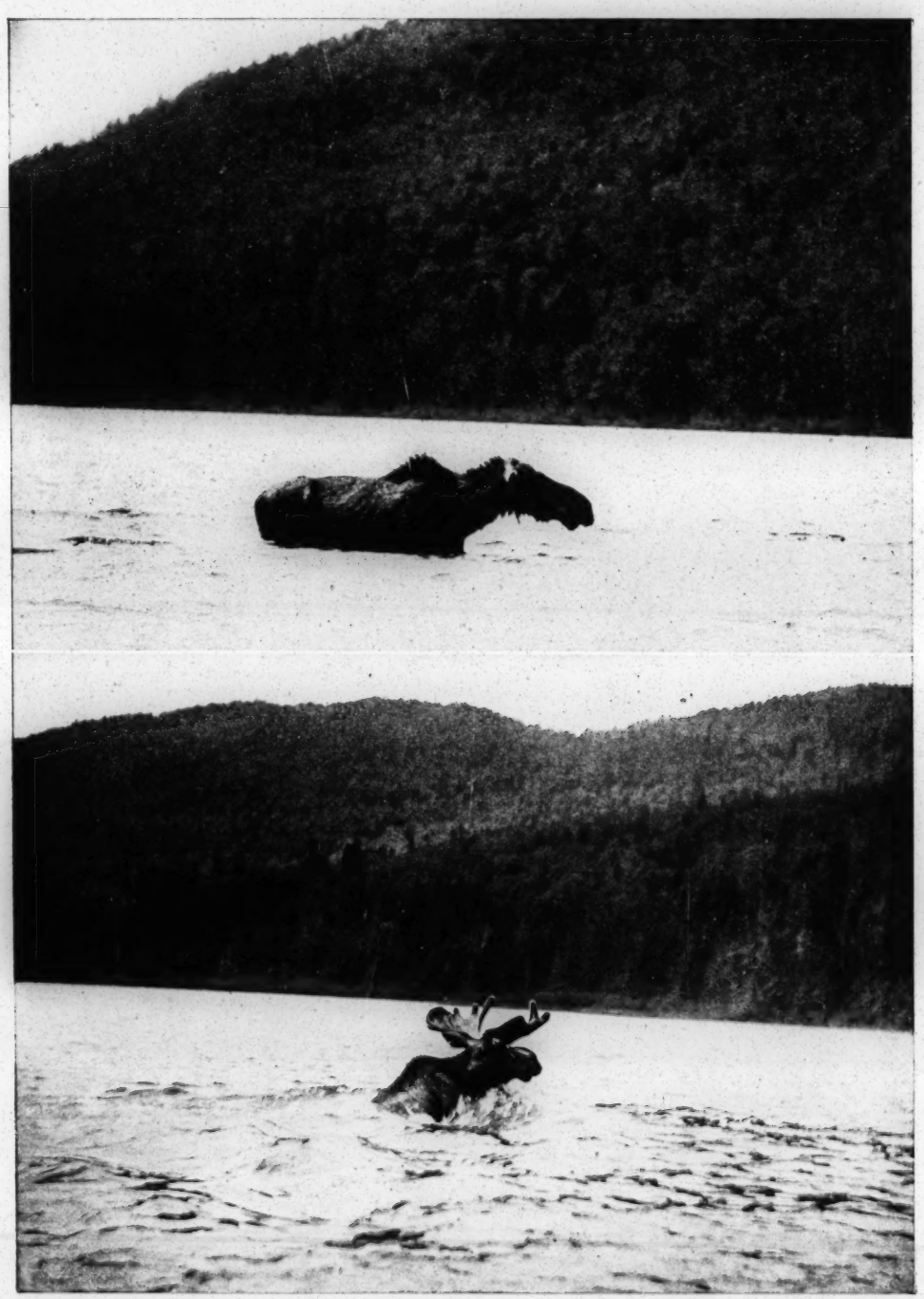
When I parted from Moore on the Lower Tobique, the following week, he said: "In my varied experience and with many scenes before me, I can only say in all sincerity that the hunt of the past week has proved more interesting; more exciting, and of more real value in the study of animal life than all that has gone before." And this from a man who has looked over a rifle barrel for more than forty years!

THE REPUTED BELLIGERENCY OF THE BULL MOOSE

A prevailing impression shared in, alike by expert and novice, is the belief that the moose—especially the bull—will deliberately charge the jacklight of the night hunter, and in many portions of Canada and the United States I have been urgently advised against trying to take flashlight pictures of this animal from a canoe at night. I recall with marked distinctness an incident of many years ago when a hunting chum of mine came back from northern Minnesota, where with one of our oldest guides in charge of the canoe he had fired at a big bull moose from under the jacklight, and how, with the jack overboard, and a big hole in the bottom of a canoe, they spent the rest of the night on the banks of the muddy marsh, vowing never to fool with a moose again under such circumstances.

But long before going to New Brunswick I had discovered that much was fallacious in this theory, though somewhat mystified by some of my experiences. It so happened when the first moose was flashed (a disreputable looking old cow) it left the bank, bore down on the canoe, knocking both cameras overboard by striking the projecting table, and passed out in the darkness of the lake to be seen no more. And then the guide, who for many years had skillfully wielded the stern paddle in many of my flashlight expeditions, and who had absorbed the many tales of the nocturnal savagery of the moose, remarked, as he looked over his shoulder nervously, "If an old cow like that can act so, then there will be something doing when we meet a bull," or words to that effect. And I speculated too, as the cameras were picked up, sustained in the water by the air-tight bellows; and then the dampened negatives were hurried back to camp for immediate development.

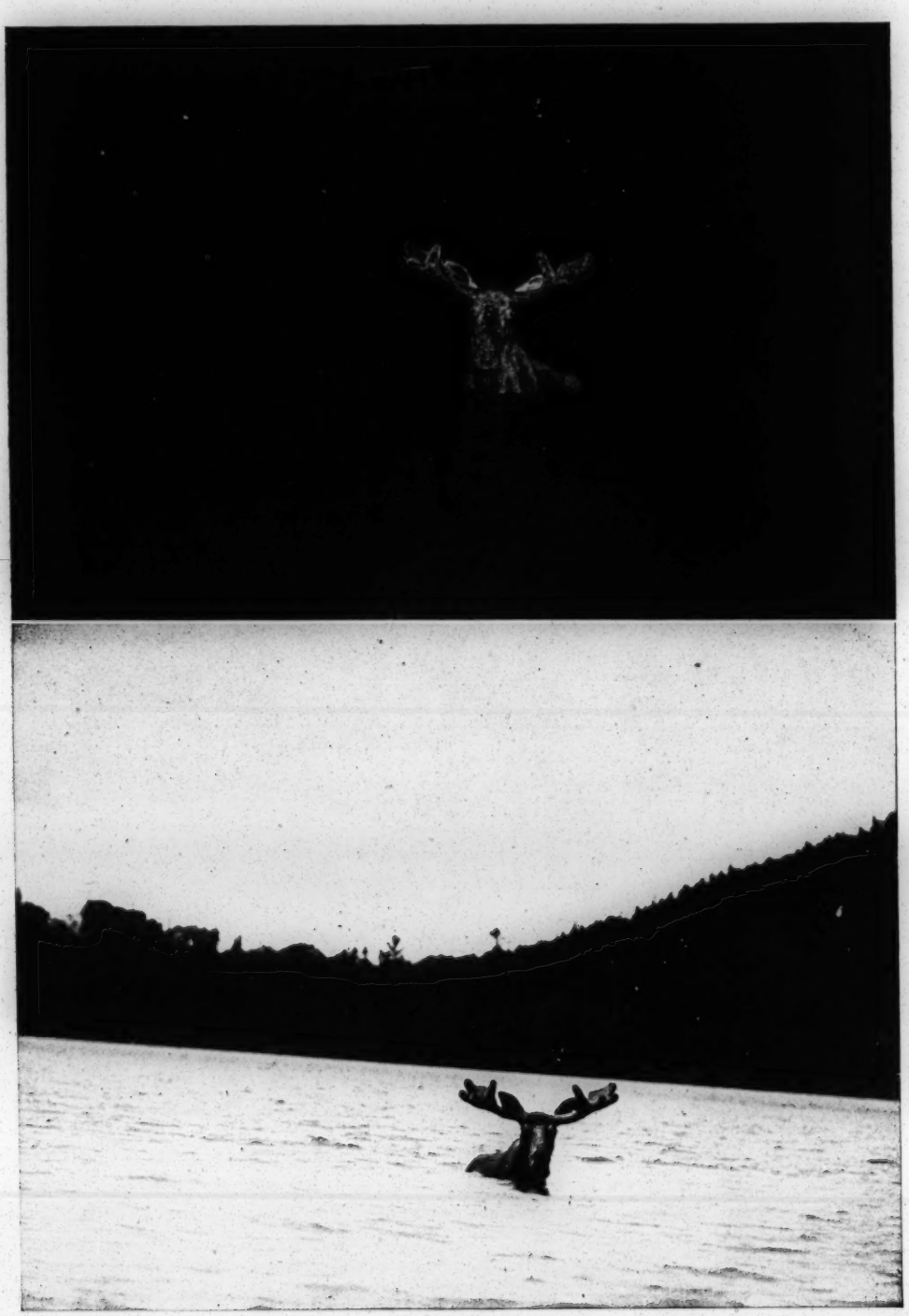
What would happen we learned the following year in the Wahnapitae Lake district of Canada, when one night as we searched for moose in a long, narrow slough, a big animal was heard feeding in the water at the edge of the marsh where pond lilies grew in profusion. As the light slowly disclosed the half submerged body, we saw a big bull moose facing us, his jaws working energetically as he crushed the roots of a lily, dragged from the bottom of the pond. He looked rather fierce and the convulsive movement of the jaws heightened the effect. It was only after repeated signals from me that the canoe came cautiously within



A CONTRAST: OLD BEDRAGGLED COW MOOSE INDIFFERENT TO APPROACHING CANOE
MAGNIFICENT BULL MOOSE IN ACTION: NICTAU LAKE

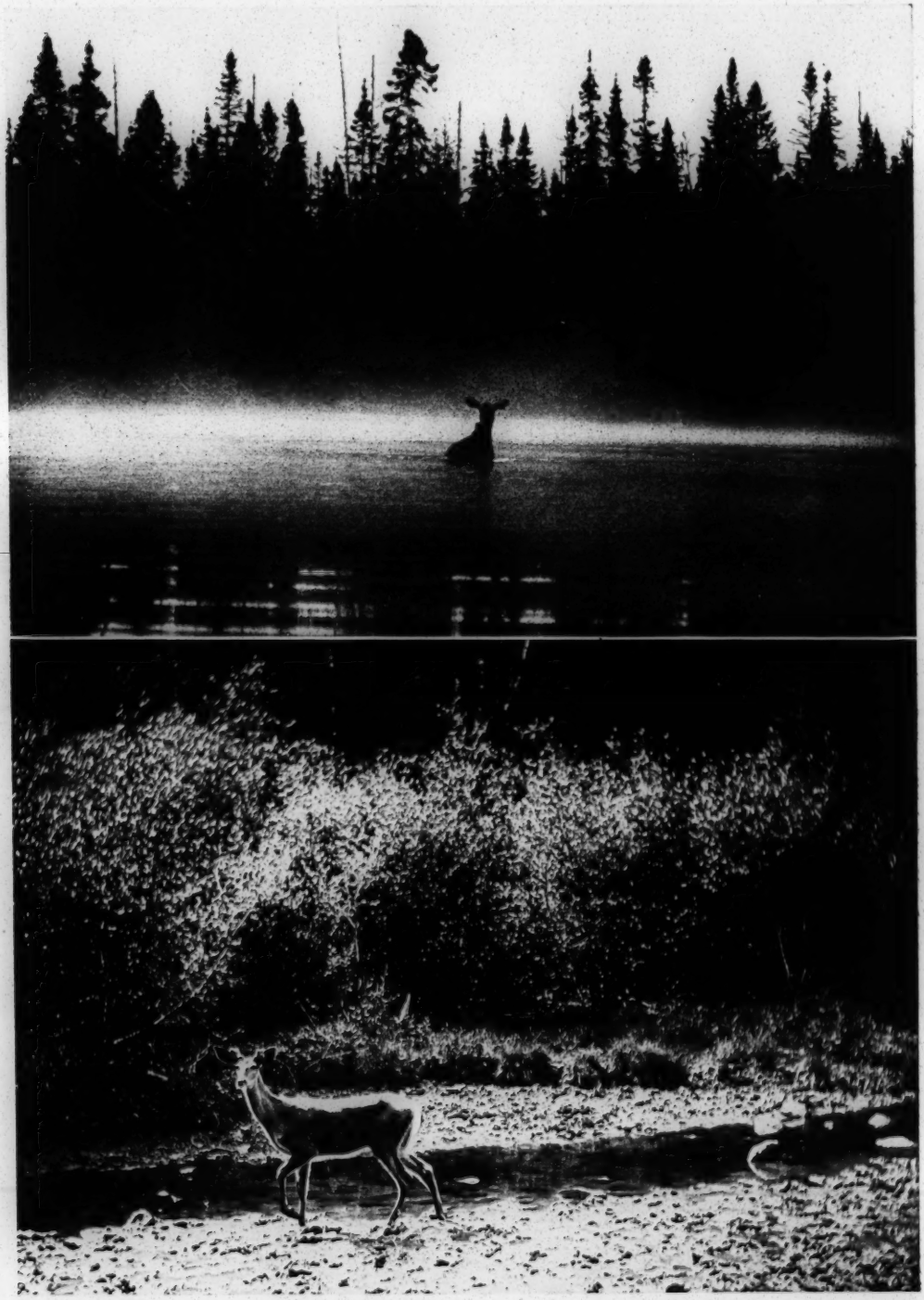
LARGE COW MOOSE DETECTING SCENT FROM CAMERA BLIND: RED BROOK CREEK, NEW BRUNSWICK

BULL MOOSE STRUGGLING ASHORE



BULL MOOSE TAKEN IN JULY, 1907, AND AGAIN BY FLASHLIGHT THREE NIGHTS LATER

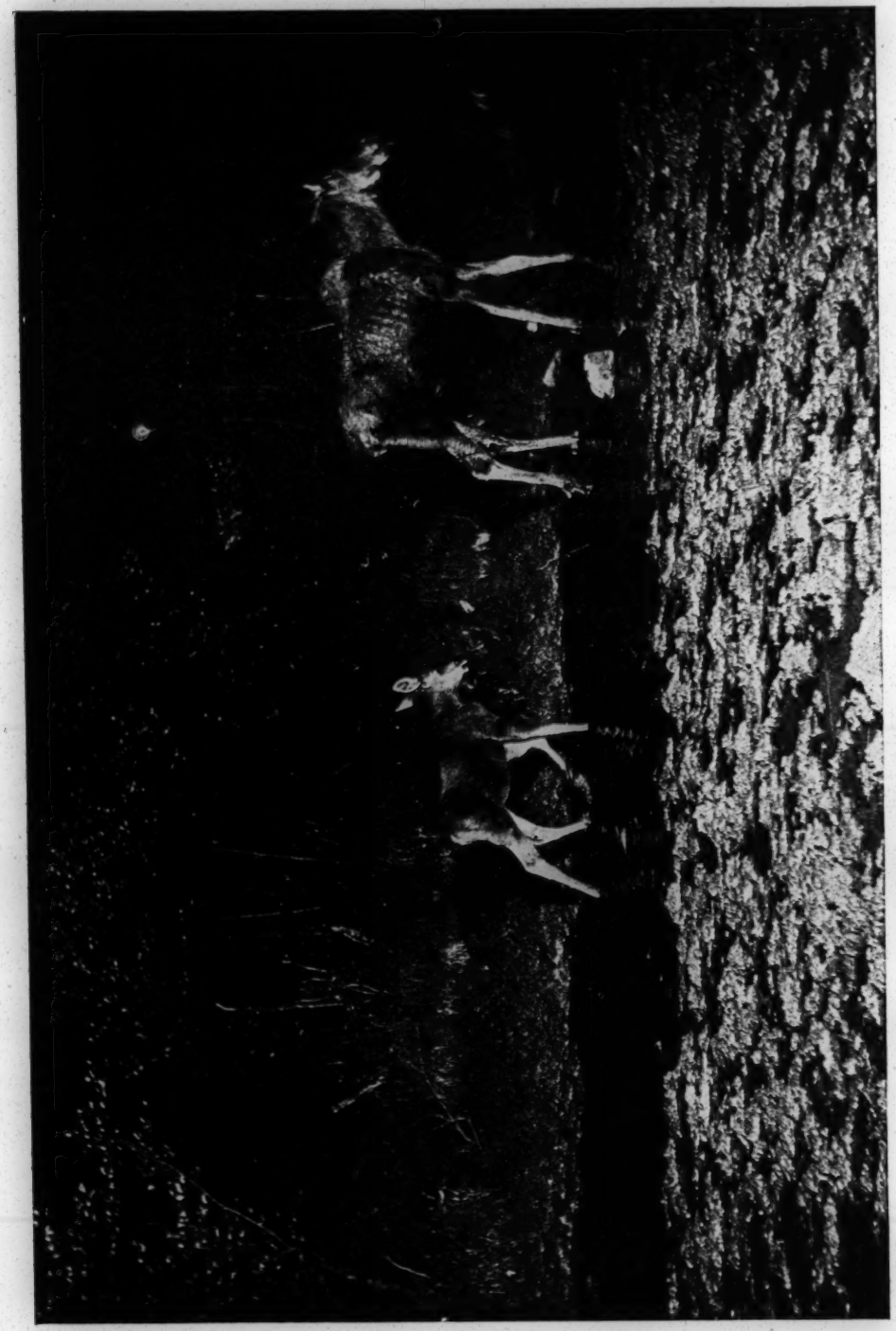
The fact that the same animal was photographed was not discovered until the development of the plates. Standing in 7 feet of water.



AN EARLY FOGGY MORNING ON NICTAU LAKE, 6 A. M.: COW MOOSE FEEDING

BUCK WHITE-TAIL DEER AT NEW BRUNSWICK TROUT STREAM

DAYLIGHT: BULL MOOSE SWIMMING SO RAPIDLY THAT IT REQUIRED THREE PADDLES TO OVERTAKE HIM (4 P. M.)
(SEE PAGE 428)



FLASHLIGHT: COW AND CALF MOOSE: UPPER TOBIQUE RIVER, NEW BRUNSWICK

Photographed from blind at midnight. Calf not seen until negative was developed two weeks later

DAYLIGHT: COW MOOSE PHOTOGRAPHED AT EIGHT FEET FROM BLIND

Drinking quarts of saline-sulphur water at a New Brunswick natural lick; dark afternoon; one-second exposure

the twenty-five feet, at which the cameras were focused.

Then a great flash, a heavy boom and all was silent for a moment as the smoke of the magnesium powder drifted away. By this time both paddles were in the water, and we were preparing for the worst. Yet there he stood, his jaws—now silent—the picture of what—anger or fear?

Before the question could be answered, down went the great head with a splash beneath the muddy surface. Was he going to turn himself into a submarine boat and spike us from below? No; he was simply engaged in pulling up another succulent lily root for his supper, satisfied that the little jacklight, behind which nothing could be seen, was but a trifling, insignificant thing, while the bright flash and the boom was a rather weak sort of a thunder storm.

Reloading the flash, reversing the plate holder, and waiting until the head

for the third time came to the surface, I fired a second flash, and then in a fit of carelessness talked too loudly, whereupon, with a rush the big animal pulled himself upon the bank, and was swallowed in the darkness of the summer night.

Year after year I had similar experiences, always to find that it was an exception not to obtain at least two photographs of the same moose at night; a thing that had never happened with the white-tail deer in nearly twenty years.

But in New Brunswick the real explanation came for this supposed belligerency of the moose at night. One evening, with Adam in the stern, his son in the middle, and myself behind the light, we paddled toward a large bull feeding in the center of the shallow lake (page 410). When thirty feet away, the head went out of sight, and we could have passed over the large antlers had we tried. When the flash went off he showed no concern, so holding our position I prepared and fired a second flash. But when for the third time I pulled the trigger the cap alone exploded with a sharp crack. In a mightly swirl the big animal, alarmed at the snapping sound behind the light, swam rapidly away to the inlet of the lake.

Recapping the flash, we paddled in the direction he had gone, and soon saw him facing the light and in about two feet of water close by the bushes (page 418). Again the flash was fired but, showing little concern, he began walking up the stream, while the paddlers continued to keep him in sight while I prepared for the fourth flash, aside from the one that missed. Just as he entered a broad pool—famous for trout—and with only his big antlers partly showing over the body, I let go the flash, for never before had I been given a chance to picture the retreating form of a moose at night.

In the fog of smoke before the jack I heard a great splash—then another—while a deluge of cold water drenched the cameras and myself, and there, standing within four feet of the jack—the big head towering seven feet above the canoe—stood the bull, looking not down into the light, but beyond as though preparing for another spring.

It certainly seemed time to do something, so, half rising, I waved my cap before his astonished eyes and gave a yell that could have been heard a mile or more. This was sufficient, for with an easy lope he entered the bushes upon our immediate left, and was seen no more. By this time Moore was howling with delight and making some remarks about the penetrating character of my voice, all of which I told him might be accounted for according to the end of the canoe one was in at the time. By an amusing coincidence this lively bombardment of a subject of King Edward's occurred on the night of July 4, and was in keeping with the pyrotechnic celebrations occurring the same evening throughout the states.

Yet this adventure explained it all and made finally clear what I had long suspected. The vivid flash was only seen by the moose on the bushes ahead, hence its sudden retreat; the cow that apparently charged our light in Canada, as the picture shows, was facing away from us; the bull that my old hunting companion shot at was standing, stern foremost, gazing at the diffused light of the jack on the bushes beyond, and the sudden rifle shot sent him away from the apparent source of danger in front and thus down upon the canoe. I then remembered that in five or six instances all the white-tail deer which had ever thrown water into the boat when dashing madly by us, in each and every case, were looking into the forest at the wavering light of the jack upon the trees or bushes, so when the explosion came they instinctively rushed into the water away from the terrifying shadows of the forest. On the other hand, in the hundreds of flashes fired directly into the faces of deer, moose, elk, and other wild animals, they never in a single instance charged forward after the flash was fired.

Hence avoid taking a flash or crack from the rifle at a moose when facing away from the jack, or otherwise prepare for a possible collision, more or less dan-

gerous when the great weight of the animal is considered, and if you can't swim, don't try it at all.

Another mistake equally common about the moose is its dangerous character in the fall, and in support of this hundreds of articles have been written, many of them by honest, well-meaning, sportsmen, usually of somewhat limited experience, describing their narrow escape from the sudden charges of these big animals when fired upon. The explanation is an easy one. When the moose is suddenly shot at from behind by an unseen hunter and unwounded, the animal almost invariably takes its back track, thus bringing it frequently face to face with the surprised hunter, who may or may not then succeed in shooting it down; and when a moose is fatally hurt, or very badly wounded by the shot from an unobserved hunter in front of the animal, it generally rushes madly forward twenty-five yards or more in the agony of its unexpected injury, and thus, once more, the animal is brought down upon the hunter with a suddenness that is somewhat terrifying to those who see in its glaring eyes an overpowering desire for revenge. In either case the animal has every appearance of charging the shooter, and hence the tales of the tenderfoot.

Then again there is a disposition among some to regard the bull moose as particularly dangerous in the mating season, even when not shot at. True, he is then more indifferent to his safety, but because in some remote forest his feverish eyes mistake the distant and skulking figure of a man for a lady-love or rival, and with a bellow he approaches, it is easy to understand how some persons purposely or ignorantly interpret such impetuosity as a desire on the part of the animal to give combat to his most feared and deadly enemy—man—when, as a matter of fact, just one faint whiff of the human body will send the biggest bull into headlong flight, his massive body quivering with fear.

INCREASE OF MOOSE IN NEW BRUNSWICK DUE TO WISE GAME LAWS

The moose of New Brunswick were extremely scarce prior to 1885, but with the gradual disappearance of the Indian trapper and hide hunter and the continuous migration of hundreds of these animals across the Maine border and the passage of effective game laws, this noble animal is now more widely distributed and is more abundant in New Brunswick than in any given area of equal size on the American continent.

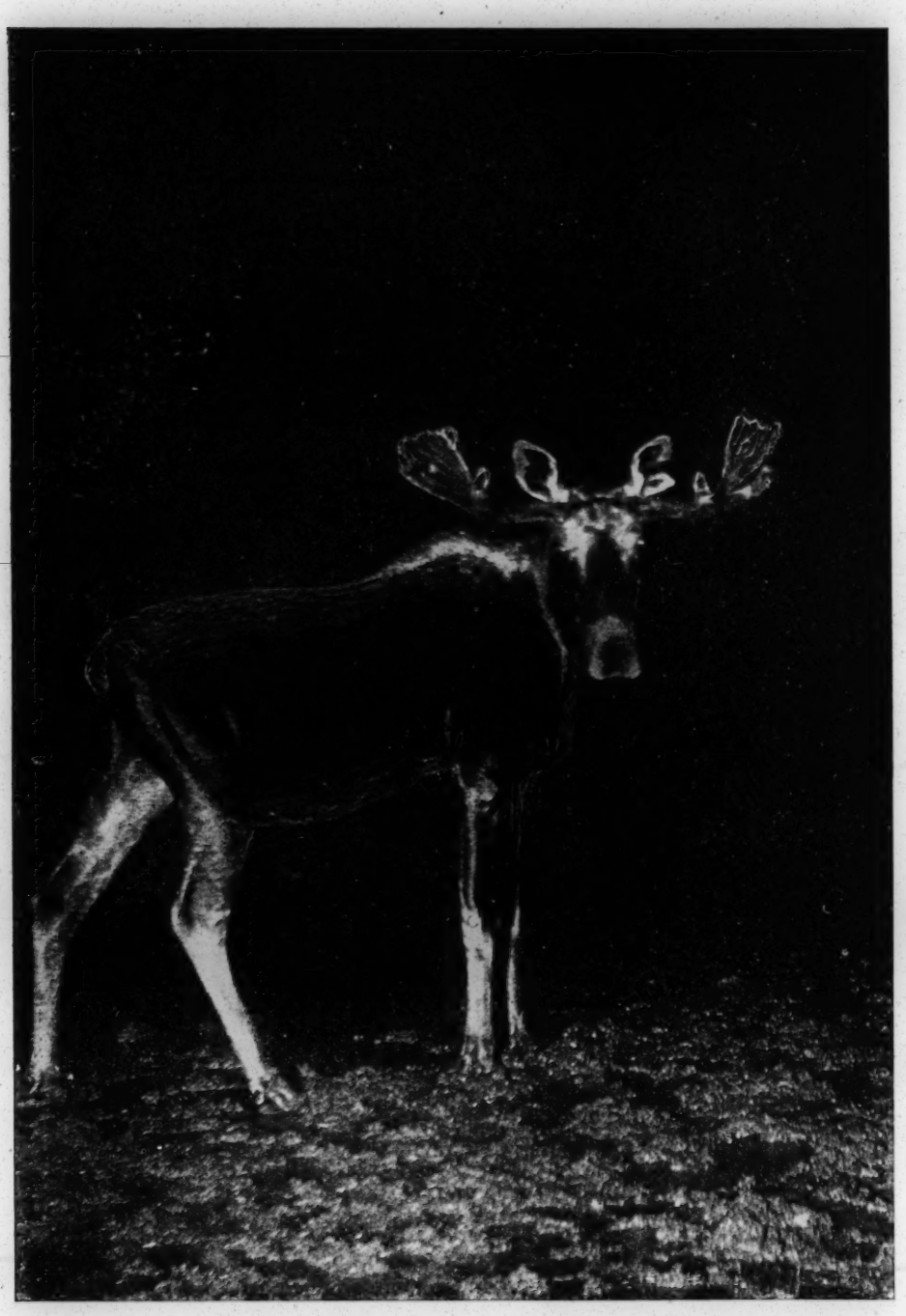
No cows or calves can be legally killed, with the result that thousands of females now form great breeding herds capable of more than supplying the present destruction of the bull and adding many more each year to the permanent breeding stock.

With the restoration of the moose came the white-tail deer of Maine, and they likewise are most abundant, saving many a big moose or caribou that would otherwise be sacrificed to meet the temporary needs of the pot-hunter or trapper. The caribou are also plentiful, whereas in Maine there are now few or none.

As an example of practical game protection, where the producing animals are carefully protected and the increment made the basis of a restricted killing, we find a splendid example of good judgment and concurrent rewards. Shall we, in this country, continue to ignore the rules of common sense, improvident for those of today and regardless of those to come?

A DIGRESSION ON SAVAGE BEASTS

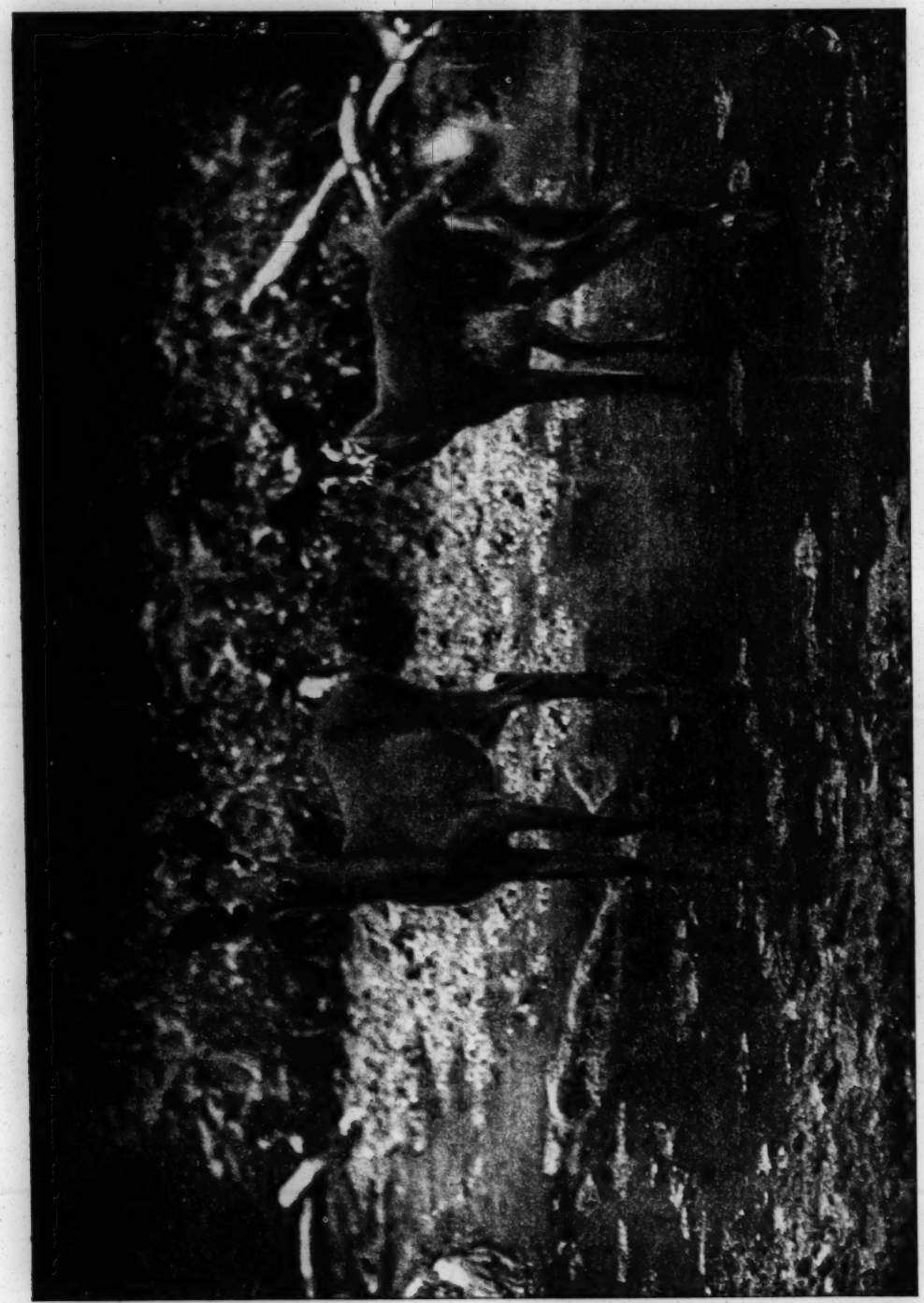
At this point I cannot avoid a digression. The almost daily reiterated reports of the "man chasing and devouring" wolf, the "fierce" lynx, the "savage" bear, the "terrible" cougar, the "revengeful" bull moose excite wonderment; for in my humble judgment all such blood-curdling attributes are unfounded and mendacious in nearly every particular. However great the perils of the African jungle, the situation in this country is entirely different. After a personal experience of more than thirty-five years in the American wilderness, from the Gulf of Mexico to the Hudson Bay waters, and especially throughout the range of these particular animals, and after an almost continuous investigation from



FLASHLIGHT: LARGE BULL MOOSE: UPPER TOBIQUE RIVER, NEW BRUNSWICK

Photographed from a blind at a distance of 15 feet (11 p. m.) July 9, 1907. The back of the moose slightly retouched

THIRD PICTURE OF THE BIG BULL MOOSE THAT WAS PHOTOGRAPHED FOUR TIMES IN TWENTY MINUTES AND WHICH, ON THE LAST FLASH, NEARLY BROUGHT DISASTER TO THE CANOE AND ITS OCCUPANTS: NICTAU LAKE, JULY 4, 10 P. M. (SEE PAGE 415)



PAIR OF YOUNG WHITE-TAIL DEER: TOBIQUE RIVER, NEW BRUNSWICK, JULY 8, 1907

Showing distinct traces of albinoism; one to right with a comical mask-like appearance. Taken in a heavy rain on a dark day

FLASHLIGHT: YOUNG BULL MOOSE GAZING WITH INTEREST AT APPROACHING JACK LIGHT: NICTAU LAKE, NEW BRUNSWICK, JULY 2, 1907

hundreds of experienced sources, I think it would be safe to say that there are more persons injured or killed through the attacks of domestic animals or wild animals in confinement, or partial confinement, in a single season than by all the wild animals of the forest in the past fifty years.

Tales of savage beasts largely emanate from two classes, the commercial nature faker and the novice, in which latter class may frequently be included land-lookers, surveyors, miners, the lumberjack, and the temporary homesteader, since many of these are wholly unacquainted with wild animal life and very often possess a vivid imagination, built up partly upon fear and partly upon a desire to report startling tales equal to the best that appear in the local press. True it is that the grizzly bear, badly wounded or defending its young, may occasionally show fight, but the old day, when this powerful animal voluntarily stood its ground, is gone forever. At least in every district where the repeating rifle has taught the lesson of man's overpowering mastery, and today not a single experienced sportsman, naturalist, guide, or any reliable trapper will relate or underwrite any of these tales of perilous adventures with the wild and harassed animals of the American forests. The pestiferous mosquito and black fly may sometimes force the bravest hunter or trapper into a rapid retreat, but no man need ever hesitate to go voluntarily and unarmed into any so-called wilderness resorts of this country through a fear of menacing beasts. And in concluding this branch let it be said emphatically that the more dangerous the supposed traits of any particular animal, the more the certainty of its being the one now most fear-

FLASHLIGHT: BOAT RIGGED FOR NIGHT-HUNTING WITH CAMERAS, SHOWING FLASH-LIGHT APPARATUS AND JACK LAMP: TAKEN 1893

ful of man's presence, whatever may be its attitude towards the other animals of the forest. To this fact alone does the predaceous quadruped now owe its existence, for were it to meet instead of retreat from the man with the gun the end would long ago have been reached.

And let it be said in justification of my apparent disposition to point out many prevailing misconceptions regarding wild animals that originally as a sportsman I believed in or accepted many of these popular fallacies. For it must be remembered that with the big-game sportsman few ever continue to kill moose, elk, caribou, or bear in large numbers or continue to hunt the same animals year after year, since usually they seek a few good trophies and revolt against the further killing of animals too huge for transportation or too tough for the platter; and hence those who hunt the same game season after season usually confine themselves to the smaller varieties of the deer family or to animals and birds whose flesh may be utilized.

Therefore most of the errors are due, in reality, to inexperience with certain habits of particular animals, however great the experience of the big-game hunter in the general field of sport.

The eye of the camera, the light of the jack, and of the penetrating flash, together with the same animal under close observation for hours at a time and year after year, have shown that in a single

season of camera hunting more accurate conclusions can be reached concerning our big game and their ways, in daylight or in darkness, than will ever occur through a dozen seasons where the crack of the rifle almost invariably follows the close proximity of the wild animal.

AT THE OLD CAMP ON LAKE SUPERIOR

While it was the purpose of the writer to describe in extenso several camera hunts on the Atlantic coast during the year, it would seem disloyal to entirely omit his old camp on White Fish Lake, in upper Michigan, where, as usual, a few weeks were spent last year and where, as might be expected, the camera was used from time to time. And at this point it seems proper to briefly describe some remarkable changes in the environment of the white-tail deer on Lake Superior and the dangers resulting therefrom, for it is of this animal, above all others, that the writer has made a life-long study.

The deer of upper Michigan have in recent years greatly changed their habits. Formerly in the early fall they gradually migrated south in order to escape the deep snows of the Lake Superior shores, averaging more than five feet on the level in mid-winter; but the building of several lines of railway across their old migrating trails, with the rights of way frequently barred by double barriers of wire fence, has cut off the retreat to their former winter range. Owing to the rapid destruction of timber on the hemlock ridges and the cedar swamps the winter quarters of the deer in the Lake Superior district have, each year, become more and more restricted, with the result that these animals seem doomed to quick destruction through the ravenous attacks of the cunning timber wolf. Compelled now, as the deer are, to yard in dozens and sometimes hundreds—with well-beaten trails throughout each range and snow deep and impenetrable on all sides—the wolf has an easy time in winter, for a single one may, in a few hours, destroy dozens of deer under such conditions. It has been estimated, from the carcasses found, that over 2,000 deer have been killed by wolves in the vicinity of White Fish Lake in the past four years, and possibly many more.

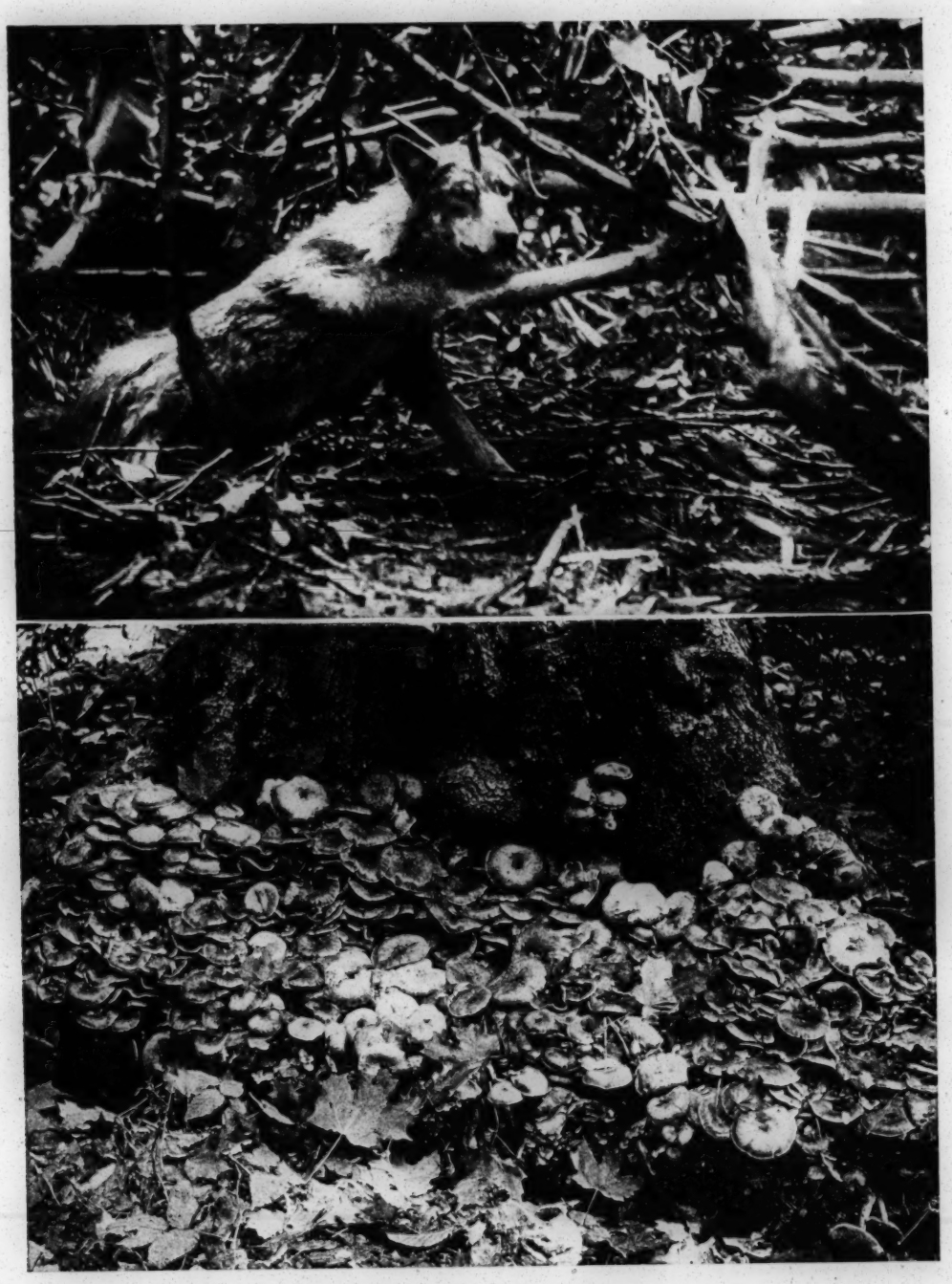
There is a picture, by flashlight, on page 426 of one of the few deer seen by me last season on White Fish Lake, where to see twenty-five in a single day, a few years ago, was not unusual.

Therefore it is with pleasure that I have also depicted on the opposite page the big gray timber wolf trapped on the same trail used by this particular deer and on the very next night. A mile away I heard its mournful howl, when the trap was sprung, and the next day the camera shot preceded the rifle bullet which wiped out its cruel and cunning life. Yet, in passing the death sentence, a feeling of momentary pity was felt, since, held in a cruel vise of steel, the big glowering animal was in no position to escape or defend itself. This was the nineteenth wolf trapped, poisoned, or shot in the vicinity of my camp the past thirty years, and in number represent the offspring of only three female wolves in a single season. The bounty in Michigan now varies from $35 to $50 per scalp, and every effort is being made to wipe out this the most resourceful, destructive, and elusive animal on the American continent. And to the Biological Bureau, at Washington, must be credited much of the successful work now being done, both in the deer forests of the North and upon the cattle plains of the West.

AFTER THE NEWFOUNDLAND CARIBOU

On a previous occasion I had spent many pleasant weeks in Newfoundland fishing, canoeing, and camping on the interior lakes and rivers, but it was not until the fall of last year that I made a special trip for caribou, and particularly for the purpose of picturing their water migration on several of the larger lakes, for when migrating they generally prefer the open waters to traveling across bogs and timbered land.

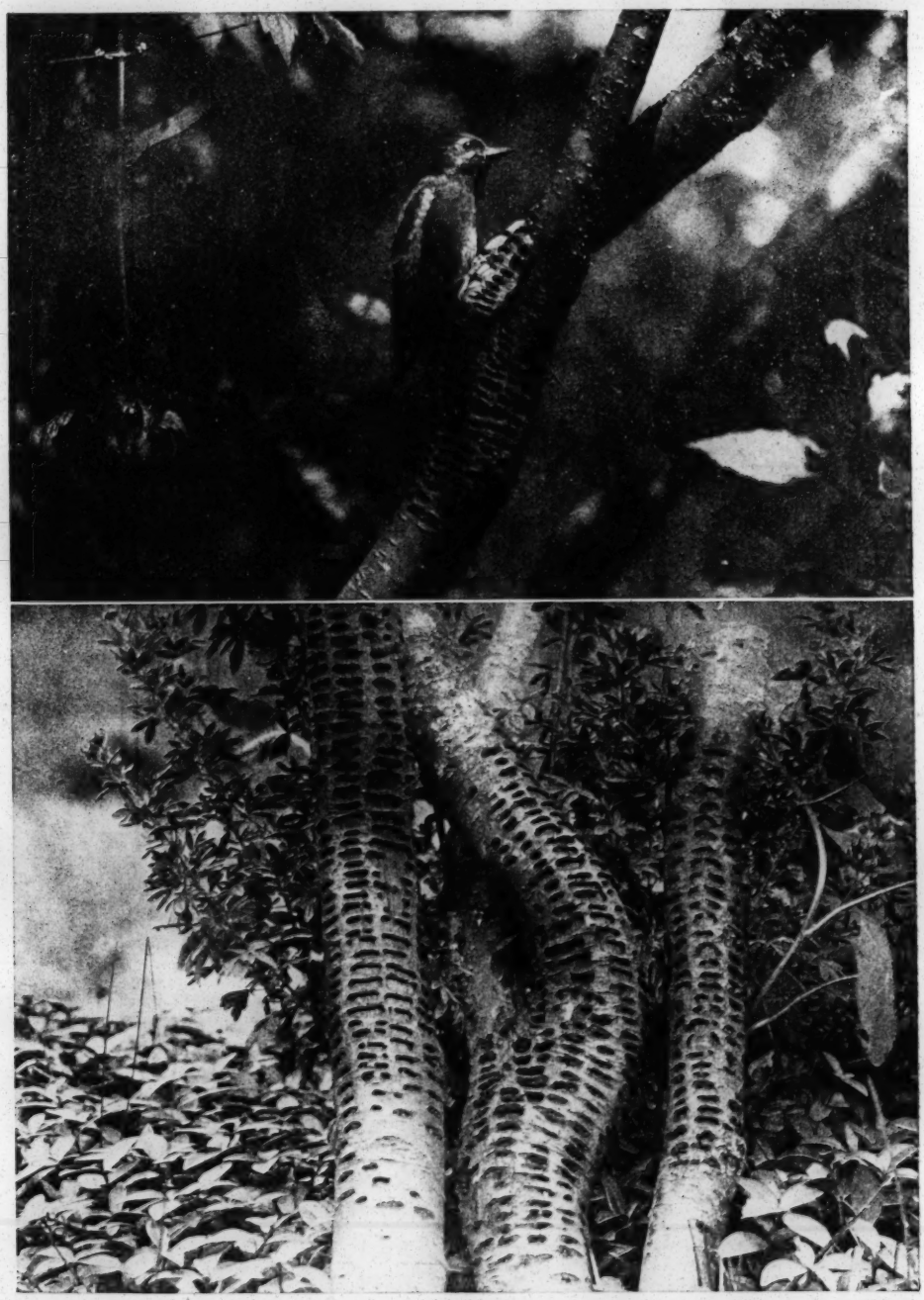
With my former guide, William Squires, we made a canoe trip up Sandy River to Deer and Sandy lakes—about



A 75-POUND TIMBER WOLF TRAPPED ON A DEER RUNWAY NEAR AUTHOR'S CAMP, LAKE SUPERIOR, JULY 29, 1907.

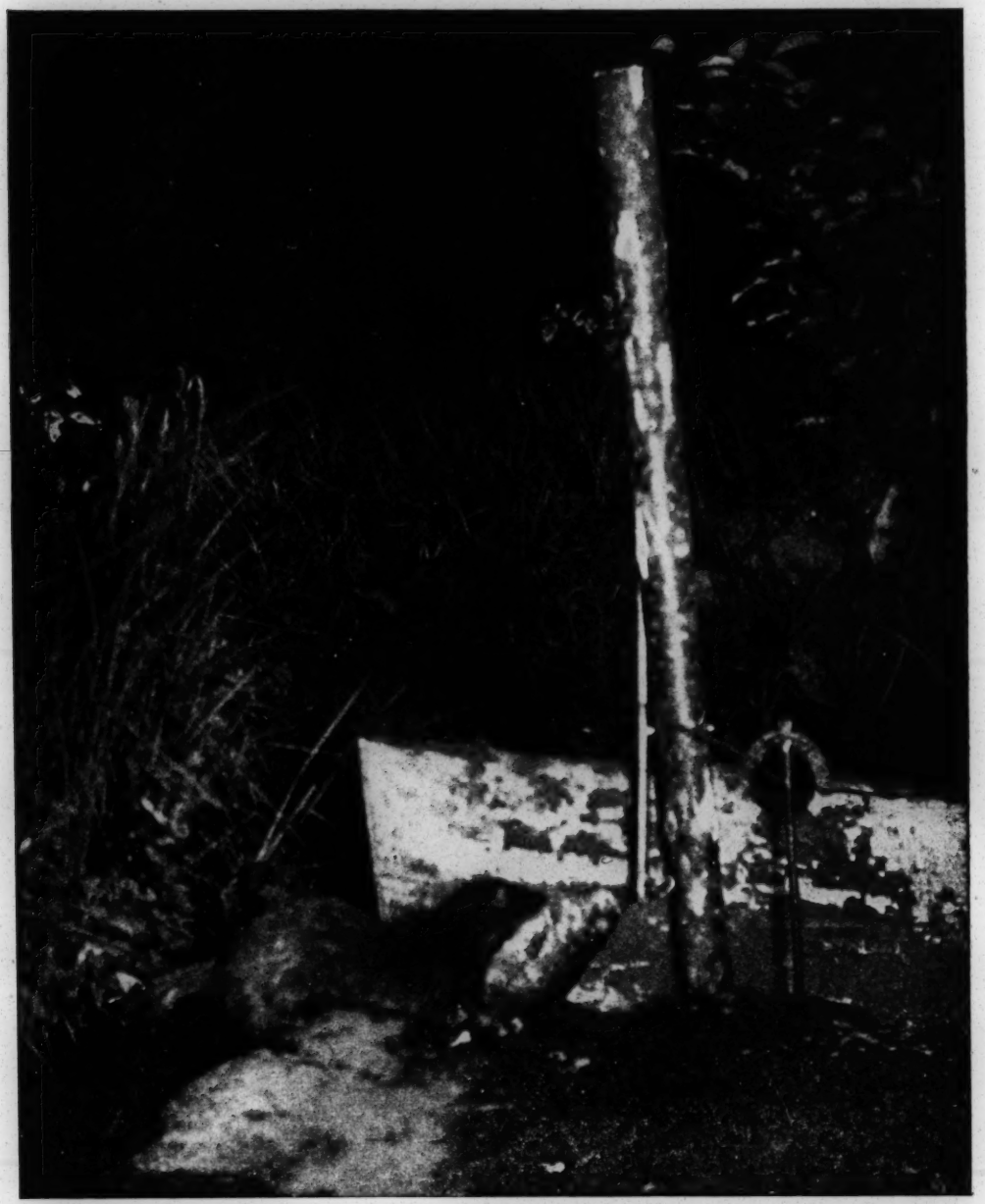
An animal that now threatens with extinction the deer in Lake Superior region and Canada

500 FOREST MUSHROOMS AT THE BASE OF A HARD MAPLE, LAKE SUPERIOR



A SAPSUCKER MAKING FRESH SAP BASINS IN BARK, WHERE IT ALSO CATCHES FLIES ATTRACTED BY THE SWEET FLUID, JULY 26, 1907

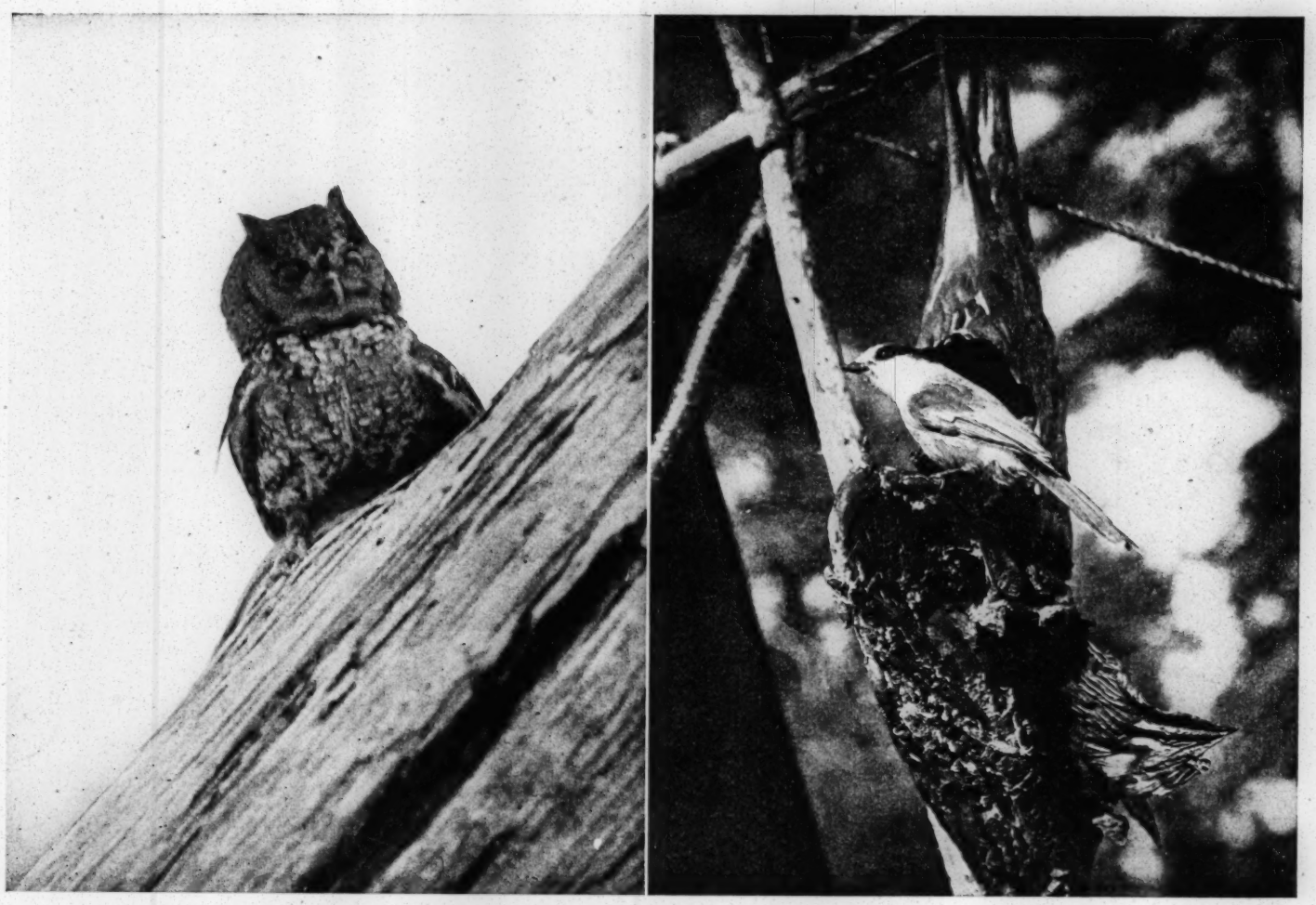
ANOTHER VIEW, SHOWING REGULARITY OF SAP BASINS COVERING SIX WEEKS' USE



MINK TAKING ITS OWN PICTURE BY FLASHLIGHT BY PULLING ON STRING BAITED WITH FISH: WHITE FISH RIVER, MICHIGAN, JULY, 1907

FLASHLIGHT: WHITE-TAIL DEER, WITH PORCUPINE TO RIGHT, JULY 28, 1907, WHITE FISH LAKE, MICHIGAN
(SEE PAGE 422)

This graceful and cunning animal is more widely distributed in the United States than any other member of the deer family; due to its wonderful resourcefulness and the dense coverts it usually inhabits



TWO EXTREMES: A FLORIDA OWL AND A CANADA JAY OR WHISKEY JACK, NEWFOUNDLAND

The latter is often called the "meat bird" and is pictured on a haunch of caribou

DEERLAKE, SANDY RIVER DISTRICT, NEWFOUNDLAND

Where the water migration of the caribou was studied. Note camera in bow of canoe

half the distance north of Grand Lake that we had gone the year before. Our camp was located at the outlet of the lake, which, with the adjoining one, formed an east-west base line of more than nine miles across the southerly line of migration. Here, on the second day, a fine stag with an antlered doe and fawn quickly entered the water, and looking neither to the right nor the left, began their long swim across the lake.

In a few minutes the canoe was by their sides, when, raising their heads aloft—previously held close to the water—they made a gallant effort to outstrip us, their stubby white tails held aloft like peaceful flags of truce. Yet why describe what the camera saw each day, when here are the scenes themselves.

I was surprised to note the small number of fawns, based upon close personal observations and those of several others. In more than 300 does of which I have a record last fall there was on an average but one fawn to four does—in striking contrast to the moose and the deer, who, besides usually having two young each, are more or less harassed by the timber wolf and cougar, while in Newfoundland man is the sole enemy of the caribou, for the wolves, once numerous, have about become extinct.

And this proportion held true under a great variety of circumstances; for with single does three were barren out of every four, and in a group of four there would be but one fawn or none, and in one band of sixteen does, crossing the river in single file, I counted but four fawns, and in larger herds the young were equally scarce. While this may be due to the extremely damp and rigorous weather in the spring, at the time the fawns are born, or to the peculiar habit of single stags in rounding up great herds of does each fall, the fact seems to be that the young of each year are away below the average of those of the other antlered game in this country.

And if my conclusions are right, it only points out the great necessity for proper game laws on this island; for once these great herds of caribou are greatly reduced in numbers the process of restoration will be extremely slow.

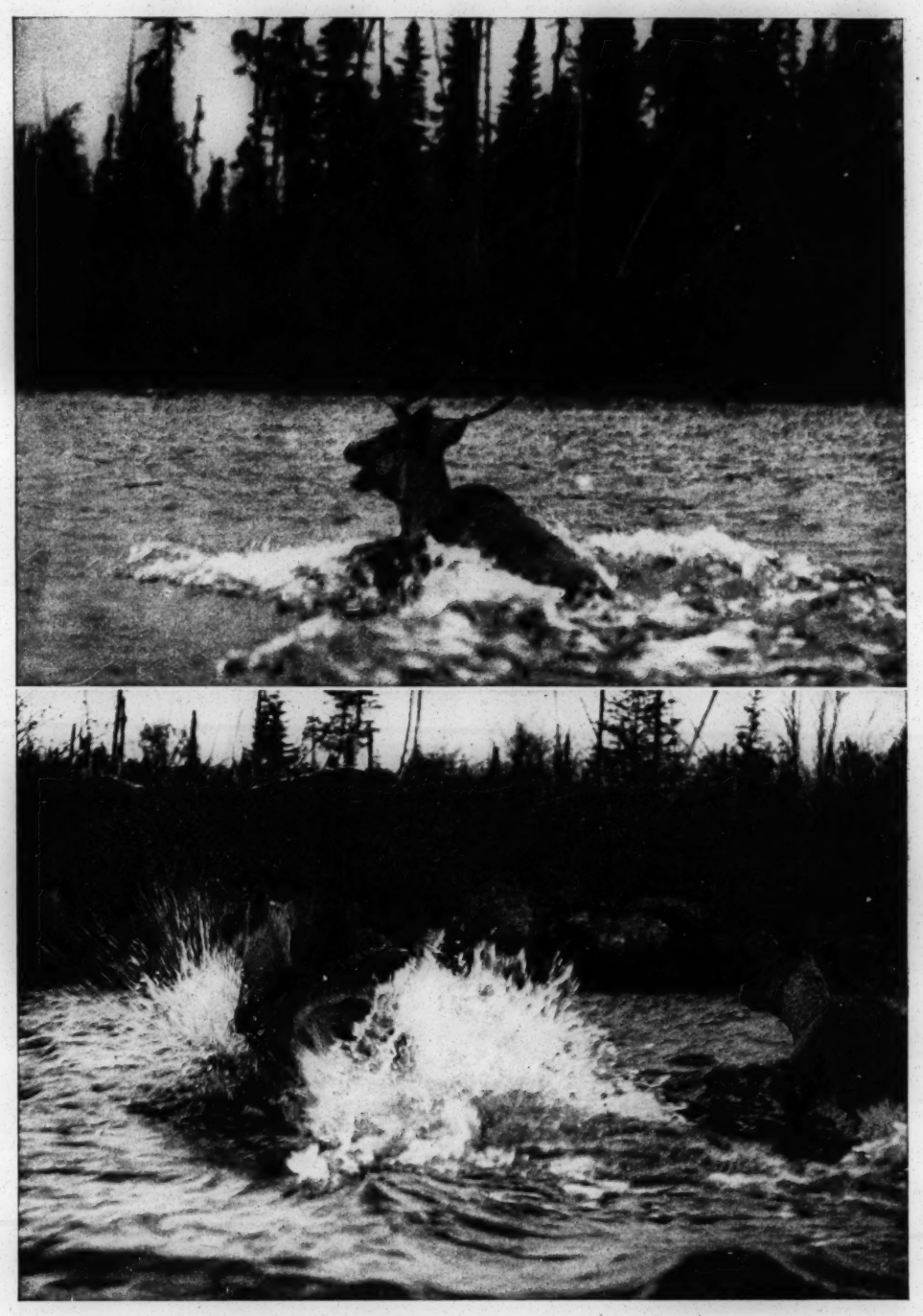
There is another matter that I may express an opinion upon, though it differs

TESTING CAMERA WITH THREAD SET ACROSS CARIBOU TRAIL

DOE AND FAWN THAT TOOK THEIR OWN PICTURES SEVERAL HOURS LATER: NEWFOUNDLAND, OCTOBER 20, 1907

DAYLIGHT: WEASEL: NEWFOUNDLAND: ITS NIMBLENESS MAKES IT HARD TO PHOTOGRAPH

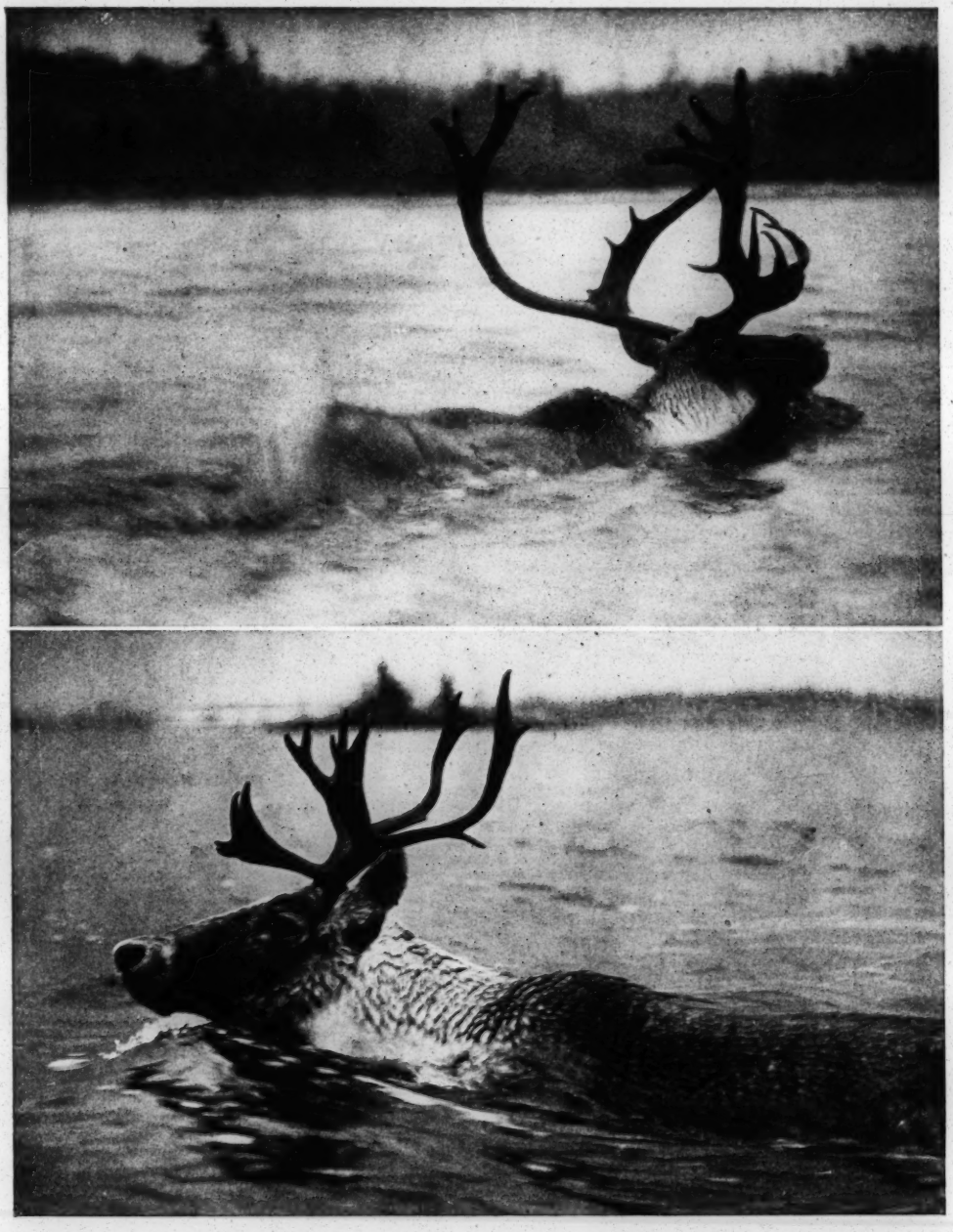
CARIBOU STAG, DOE, AND FAWN: ONE-HALF OF THE DOES CARRY SMALL HORNS. THE FAWN IS ASSISTED BY THE SUCTION IN SWIMMING



CARIBOU IN AGONIZED RUSH TO ESCAPE CANOE

CARIBOU SWIM SLOWLY, BUT GO ASHORE WITH GREAT SPEED

CARIBOU IN HERDS SWIM COMPACTLY: SUCTION HELPS THOSE IN REAR. FOUR DOES AND A SINGLE FAWN
(SEE PAGE 428)



VERY LARGE CARIBOU STAG, TAKEN IN ROUGH WATER AND ON A DARK DAY

CARIBOU STAG WITH SYMMETRICAL HORNS PHOTOGRAPHED AT EIGHT FEET. NOTE BEAUTIFUL WHITE COLLAR CARRIED BY STAGS ONLY

from the statements of Mr Selous and other well-known sportsmen who have hunted on this island, viz., the supposedly great speed of the caribou in swimming. When undisturbed, a single caribou, crossing large lakes, swims about three miles an hour, and a fair-sized herd swims somewhat slower. When first sighting the canoe, the animal springs half out of the water, and then, with head erect, tries to elude the paddlers, and for the first one hundred yards its speed varies between five and six miles an hour; and then, becoming somewhat exhausted by the extreme exertion, the speed slows down to about three and one-half miles an hour—a gait that one paddler in a loaded canoe has no trouble in beating. The swimming speed of this animal is therefore below that of the moose and the white-tail deer.

I saw no caribou enter the water before 7 a. m. or later than 5 p. m., the movement being greatest from 10 to 3. The animals, as a rule, are not nocturnal, either when migrating or feeding, though in the fly season they feed at night, and late in the fall, under the stress of heavy snow-storms, sometimes travel night and day.

It is also noticeable that they generally move against the wind, depending almost wholly upon the nose to detect danger, which from time immemorial always lay before them, in their long march from the northern peninsula to the southerly coast. As the result of relying so much upon scent, neither their hearing nor sense of sight is at all acute, for one may sit close to the runway and the animal, if the wind is favorable, will pass by within a rod.

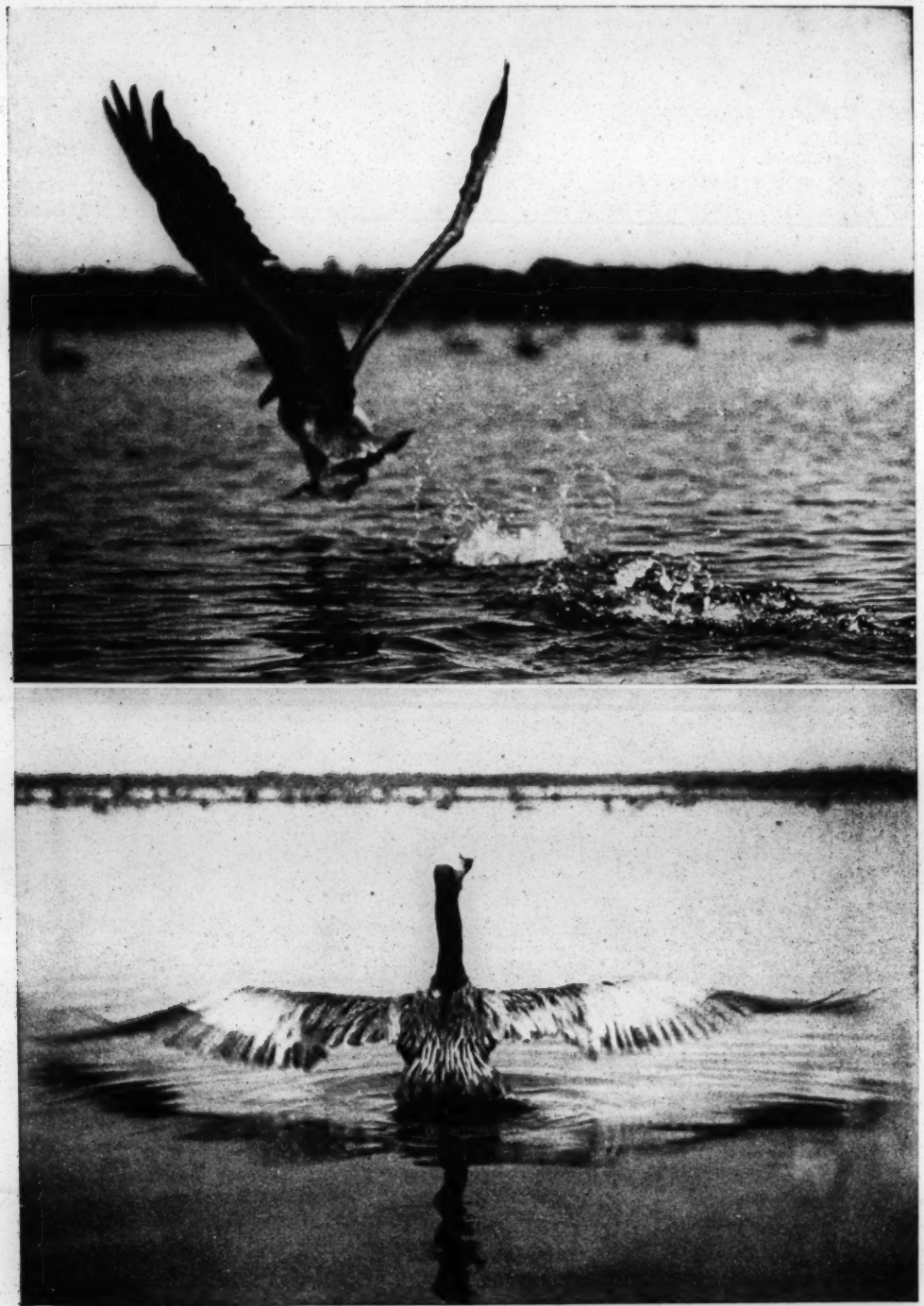
Since the building of the railroad that intersects the island, many large herds of caribou remain permanently either north or south of the track, and in this respect resemble the white-tail deer of northern Michigan before mentioned.

While the island is visited each fall by numerous non-resident sportsmen in quest of stags with fine heads, it is difficult to compute the amount of meat abandoned each year in the more remote portions or because the rankness of the stag often makes its meat unfit for food at that season of the year. Two years ago, for instance, I met three young collegians from the "States," who several days before, on barrens east of Grand Lake, encountered a number of migrating caribou, and by good judgment and accurate shooting had, in a single day, picked out and killed nine large caribou stags—the three apiece allowed by law. They candidly admitted that, owing to the toughness of the stags and the distance from their camp, every ounce, aside from the heads, had been abandoned, representing a total of more than 3,500 pounds.

Yet these young men had come thousands of miles for caribou hunting and were in every (other) respect a manly set of fellows. After seeing some of my caribou pictures and hearing the incidents connected therewith, they seemed to realize that big-game hunting with the camera was an ideal method and one that they hoped to try hereafter. As with the caribou stags, so with the bull moose, the bull elk, and the gigantic grizzly bear, whose decaying flesh we have noticed year after year polluting the air of some beautiful valley, simply because the antlers or the hide was all that could be saved when these great animals were stricken down in districts too remote for transportation.

THE BROWN PELICANS OF THE INDIAN RIVER

For many years I had been familiar with the pelican colony on Indian River, Florida. On one occasion, four or five years ago, I made a trip expressly to take flashlight pictures of the breeding birds, but upon firing the first flash the whole colony took wing, heading for the boat with its glaring lantern, until we were fairly overwhelmed, as hundreds of great birds, with flapping wings and large bodies, banged into or over the boat. Crouching down in the bottom, with the cameras hurled from the bow, we waited until the avalanche was over, when my Virginia guide, a stranger to



RISING FLIGHT OF PELICANS: *a*. WINGS SEEN AT DIFFERENT ANGLES. *b*. WHERE IT RESEMBLES THE CANADA GOOSE

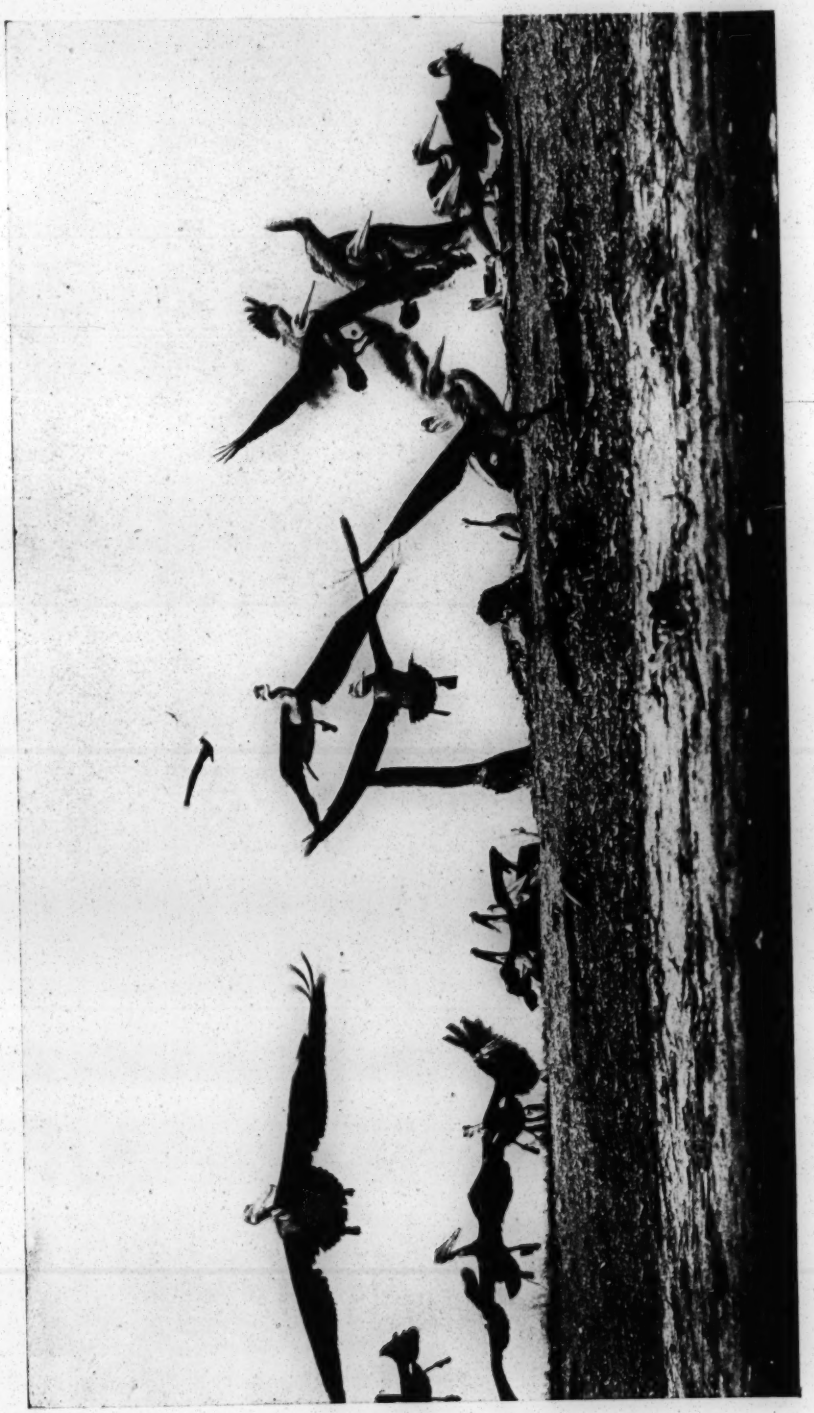
SIDE FLIGHT OF PELICANS

these waters, remarked as he tossed a flapping bird overboard, "Darn these pell-mellicans." Through fear of disturbing the birds further in the midst of the nesting season, we quietly withdrew with a single much-prized picture to our credit.

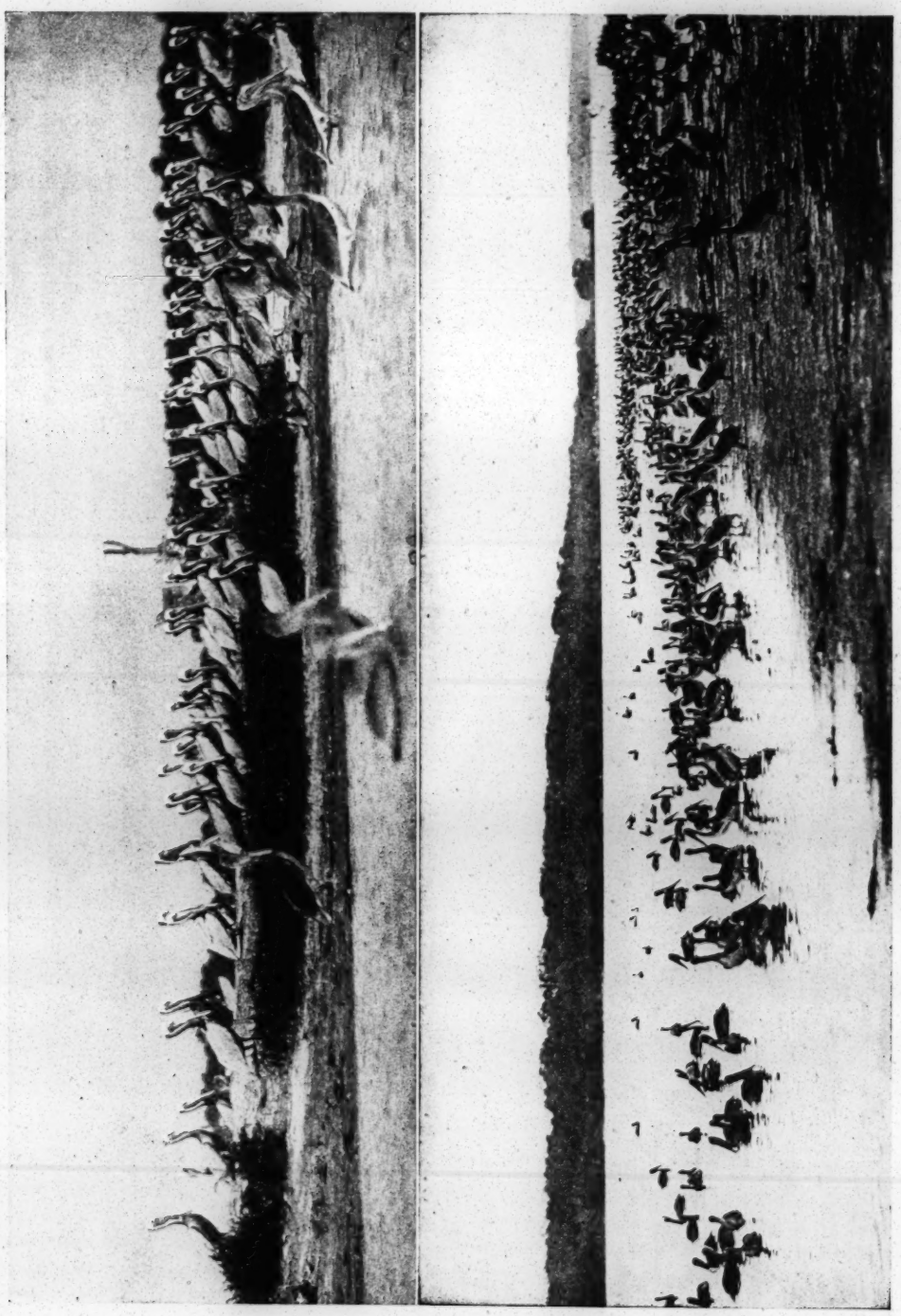
This spring, in company with my former shipmate, Mr Chapman, we revisited the island, he to take cinematograph pictures of this wonderful colony and some upon the new colored plates, and I to get pictures of these birds in flight or with the stereoscopic camera.

We found on March 10 most of the young birds ready for flight, numbering some 1,500, while scattered about were the remains of fully 800 more of a later hatching, killed either by the heavy freeze of the week before or by reason of a midnight raid made by local fishermen, who, disregarding the fact that the pelicans live almost wholly upon the worthless menhaden taken in the open sea, have shown in recent years a great enmity toward these birds because the young occasionally, in their early efforts, catch a few mullet in the Indian River.

The brown pelicans are abundant on the Florida and Gulf coasts. When going or return-

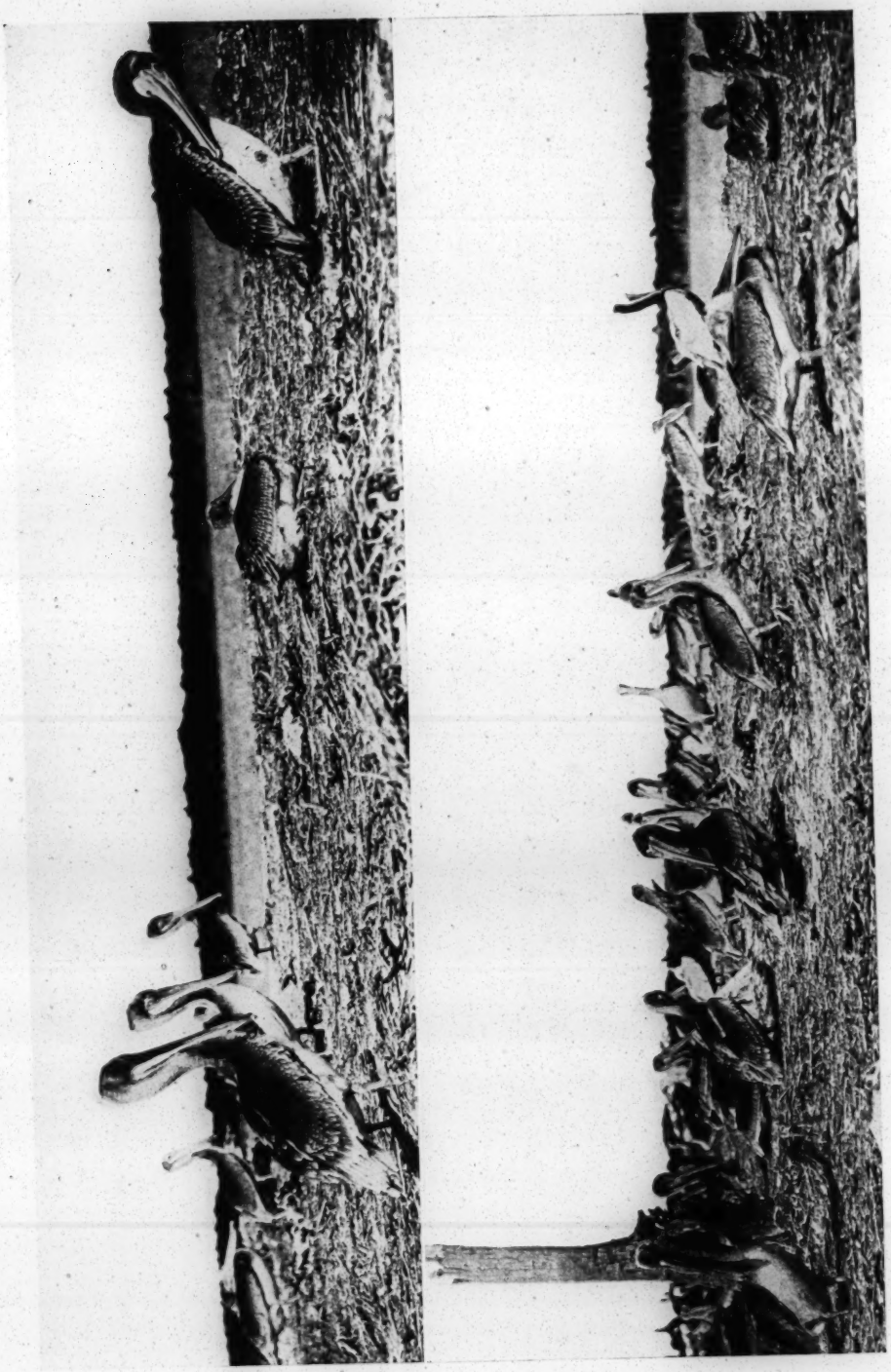


APPROACHING FLIGHT OF PELICANS



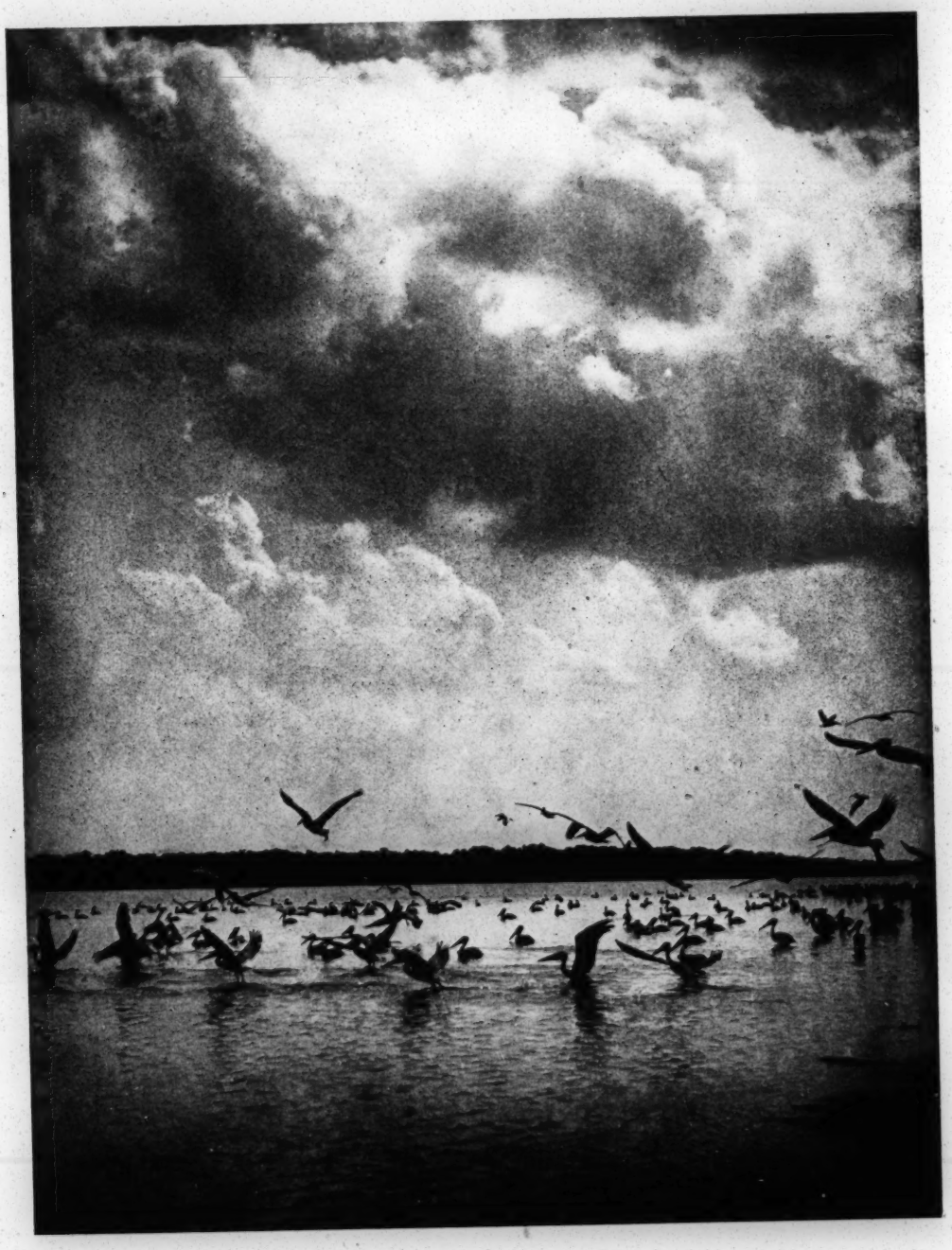
A GROUP OF FINE OLD PELICANS, WITH A FEW YOUNG IN FOREGROUND, ALL FACING ONE WAY

ABOUT 1,000 YOUNG PELICANS BATHING AND PLAYING AT WATER'S EDGE

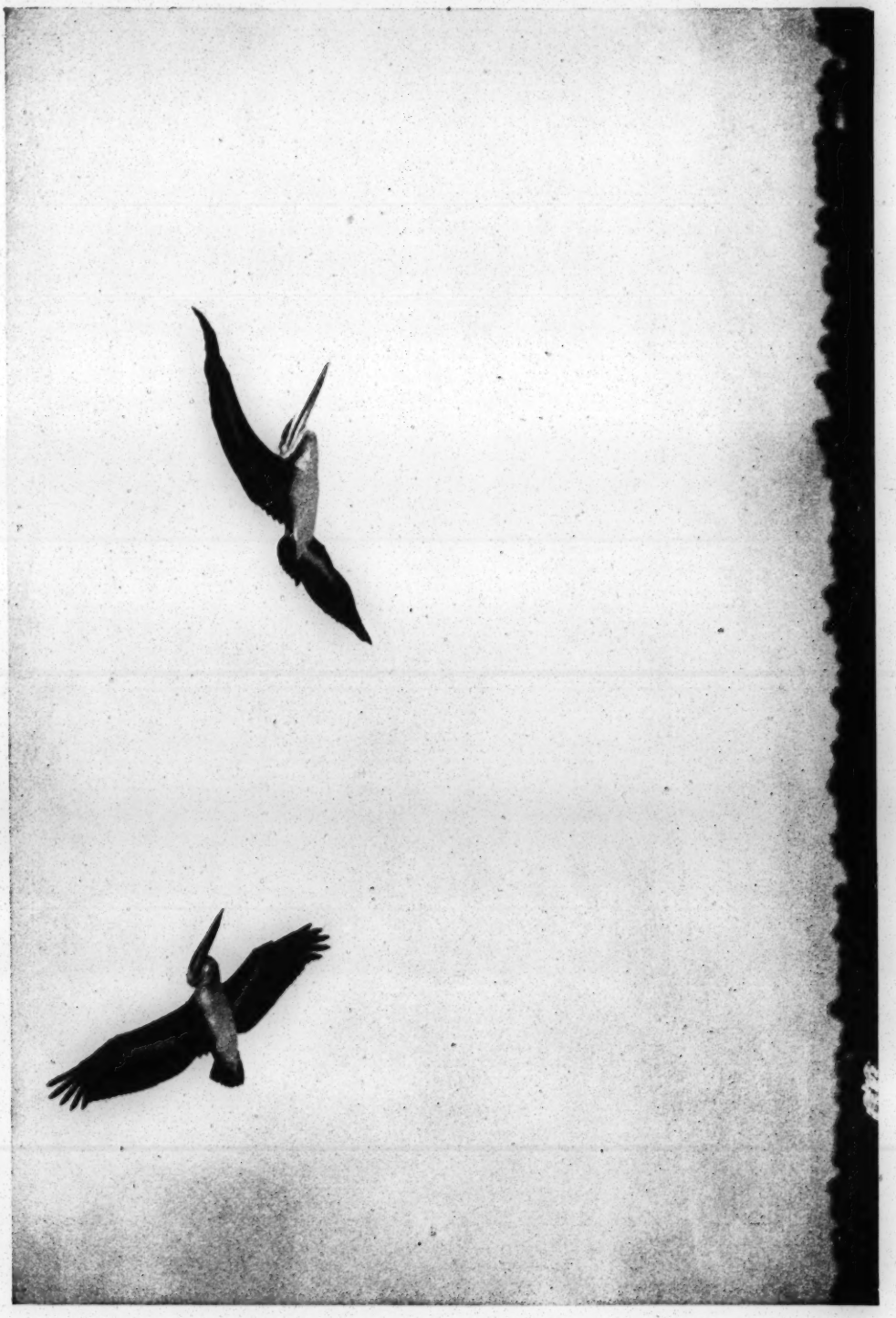


GROUPS OF YOUNG PELICANS SLEEPING AND PREENING THEMSELVES

YOUNG PELICAN IN "GOOSE-FLESH" PHASE

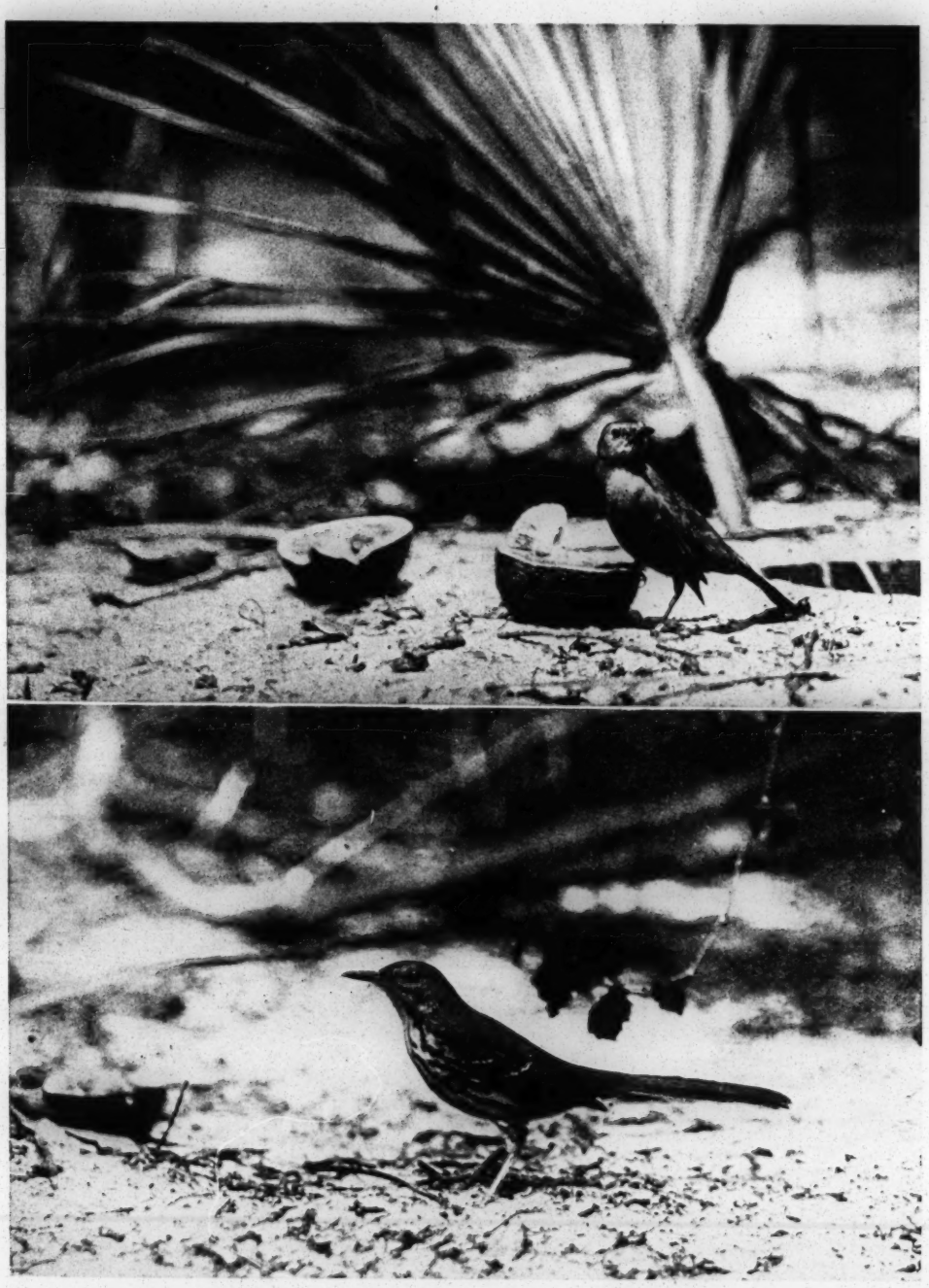


PELICANS IN SHADOW OF APPROACHING THUNDERSTORM



PELICANS COMING FROM THE OCEAN TO INDIAN RIVER WITH FISH FOR YOUNG

MALE AND FEMALE QUAIL IN ORANGE GROVE: HALIFAX RIVER, FLORIDA, APRIL 1, 1908 (SEE PAGE 446)



CATBIRD EATING ORANGE: HALIFAX RIVER, FLORIDA, APRIL 1, 1908

BROWN THRASHER APPROACHING ORANGE (SEE PAGE 446)

WILD GRAY SQUIRRELS EATING ORANGES, HALIFAX RIVER, FLORIDA, APRIL 1, 1908

ing from the fishing grounds they usually fly in flocks of from four to ten, in single file, the leader setting the pace and the rest in slow measured strokes flop or sail in unison. The adult, in the breeding season, has a seal-brown head and neck with a yellowish crown, the remainder of the body being silver gray; the young, when half grown, are a soft, snow white, changing to a dull gray brown for the first year.

Late in October and on the same day the pelicans of Indian River suddenly assemble from all directions as though controlled by instinct or concerted signals, and a few weeks later are housekeeping on a small island occupied exclusively by pelicans for at least seventy-five years.

Recently all the mangrove bushes have been broken down or destroyed by the heavy nests, with the result that the pelican, from a tree-nesting bird, now occupies the ground, even though many similar adjoining islands are well wooded.

The breeding season is very prolonged, lasting until nearly June, with marked evidence of breeding in detachments, due partly to the small area of the island, the loss of young by high tides or frosts, and perhaps also to the fact that many of these birds raise more than one brood each season.

The young are usually three in number and therefore, unlike the man-o'-war birds and the boobies, are sufficiently abundant to withstand the ordinary persecution by man, destruction by disease, or the elements. The full-grown young are cannibalistic, swallowing down the newly hatched with evident relish whenever the parent birds of the latter are away for more than a moment or two.

Under the wise protection of the National Audubon Society and through the foresight of President Roosevelt in setting aside this island as a government reservation for breeding birds, there should be little difficulty in preserving the pelican of Florida from extinction, where now they may be seen daily along four hundred miles of coast, partly filling the gap made by the almost complete destruction of the egret, the white heron, the flamingo, and the roseate spoonbill, the former victims of a woman's fashion.

SMALL GAME IN A FLORIDA ORANGE GROVE

We have now nearly reached the bottom of last season's game-bag, and in it will be found specimens of bird and animal life more common to the suburbs or the less remote portions of our country. To many of the present readers big-game hunting is beyond their anticipation, and therefore the opportunity to picture at their country homes many local birds and animals is worth reciting, however much the writer's inclination lies in seeking game of rarer kind.

After leaving the pelicans of Indian River a visit was made to relatives on the Halifax River, one hundred miles farther north, where a big orange grove extended back to heavy timber and many thickets. No rain having fallen for three months, the birds and forest animals were alert for any new sources of water supply. Taking advantage of this, I sank a small wooden pail level with the soil, filled it with water, and by it scattered bread crumbs, grain, and oranges cut in twain, while twenty feet away my little green canvas tent was erected, partly sheltered with palmettoes.

In a short while many visitors came, and as the tent was moved closer each day, they feared it not. On the third day I entered the blind for the first time, using my largest lens (14-inch focus).

In the total of four hours spent in the tent on different days, I succeeded in getting photographs of the cardinal (male and female), mocking-bird, cheewink (male and female), turtle-dove, sand-dove, brown thrasher, field sparrows, quail (male and female), squirrels, rabbits, and wood-rats, several of which are here shown approaching or nibbling at the oranges, which above all else were their favorite food and drink. A pair of quail excited my greatest interest, as their appearance was totally unexpected, though I had been hearing their soft spring notes near by for several days.

And here ends, for the present at least, the tale of a camera's conquest in the realms of the woods and the waters.

PEARY'S POLAR EXPEDITION

THE substantial and exceedingly generous subscription of $10,000 by Mr Zenas Crane, of Dalton, Massachusetts, to the Peary Polar Expedition will probably enable Commander Peary to go north again in July, 1908. The *Roosevelt* has been refitted with new boilers and machinery and stocked with sufficient provisions for three years' absence. Provided $15,000 additional is subscribed, and we are informed by Commander Peary that he has good hope of obtaining this amount, the expedition will leave New York early in July. Commander Peary will take a second ship as far as Smith Sound to carry extra supplies and coal for the *Roosevelt*. After embarking his Esquimo at Etah, Greenland, he plans to force the *Roosevelt* as far north as the ship attained on his last expedition, and then to winter on the north coast of Grant Land, making his polar dash in the spring of 1909.

If Commander Peary can establish his winter's base for the coming expedition as far north as he had it last time, we have strong reasons for believing that he will succeed in reaching the Pole on the next attempt. His last dash across the ice was unsuccessful largely owing to the rapid current discovered by him setting eastward across the northernmost coast. This current, however, he intends shall help his advance on the present expedition, as he will march in a northwesterly direction instead of aiming straight for the Pole when he leaves land. The current would then carry him toward the Pole instead of away from it. Readers of this Magazine are referred to the special map of the North Polar regions and the Arctic number, July, 1907, which shows the route planned by Commander Peary for the present expedition.

It would be most unfortunate if sufficient funds were not forthcoming to enable Commander Peary to go north once more. He is in the prime of life and has more than twenty years of successful Arctic experience behind him. Mr Zenas Crane merits the cordial approval of all Americans who want to see this great geographical problem solved soon and by an American.

MAGNETIC SURVEY OF THE PACIFIC

WITH the return of the yacht *Galilee* to San Francisco on May 21, after an absence of nearly three years, a most successful expedition is brought to a close. This yacht was chartered by the Department of Research in Terrestrial Magnetism of the Carnegie Institution of Washington in order to make a magnetic survey of the Pacific Ocean, both in the interest of safe navigation of these waters and of magnetic science in general. For a fuller statement of the objects of the work and of the results of practical and scientific importance obtained, the reader is referred to the article by the Director of the Department of Terrestrial Magnetism, Dr L. A. Bauer, on "The Work in the Pacific Ocean of the Magnetic Survey Yacht *Galilee*," in this Magazine, September, 1907.

For the greater part of her lengthy cruise the *Galilee* was commanded by Mr W. J. Peters, the scientific representative of the National Geographic Society on the Ziegler Polar Expedition. He has been assisted by the following observers, assigned to him at various times: Messrs J. P. Ault, D. C. Sowers, J. C. Pearson, P. H. Dike, Dr Martyn, and Dr George Peterson. Captain J. T. Hayes, a skillful sailing master, had charge of the navigation of the vessel throughout the cruises. Dr Bauer in his various reports accords the highest praise to Mr Peters and his assistants for the very satisfactory and expeditious manner in which the magnetic work was performed.

The total length of the cruises executed in the Pacific Ocean during the period of not quite three years aggregates 65,000 miles, or equivalent to a circumnavigation of the globe two and a half times. The cruises extended from the Pacific to the Asiatic coast and from the Aleutian Islands down to New Zea-

land, almost every prominent port of the islands in the Pacific Ocean having been visited.

Though this vessel had no auxiliary power whatsoever, but had to depend entirely upon her sails for motive power, and in spite of the fact that she encountered at times most terrific storms, only one accident befell the party. While at Yokohama the *Galilee* was blown by a typhoon during the night of August 24, 1906, against the breakwater, such damage being sustained that the vessel sank in about fourteen feet of water, the party and crew being obliged to take refuge in the lighthouse on the breakwater and remain there until the storm had subsided. The vessel was, however, at once drydocked and the repairs pushed, so that ten days after the accident she left Yokohama for a 6,000-mile cruise to San Diego, California. Not a single life was lost throughout the entire time.

The *Galilee* is now to be returned to her owners, and it is noted with gratification that Dr Bauer's plea for a vessel especially adapted for ocean magnetic work (see article above referred to) has met with success. The Carnegie Institution has undertaken to build a vessel, in the construction of which very little iron will enter. The plans are now being drawn by Mr Henry J. Gielow, naval architect and engineer, of New York, and it is expected that this new vessel, to be called the *Carnegie*, will be ready in time to resume the ocean magnetic work a year from now, this time in the Atlantic Ocean.

THE NORTH AMERICAN INDIAN

THE first two volumes of Mr. Edward S. Curtis' work on the "North American Indian" have appeared, Volume I describing the Apache and the Navaho, and Volume II the Pima, Papago, Mohave, Yuma, Maricopa, Walapai, and Apache Mohave. An advance announcement of this work was given in the July, 1907, number of this Magazine. Mr Curtis, it will be remembered, is making an ethnological study and a photographic record of all Indians in the United States and Alaska still living in a primitive state. His illustrations are to appear in twenty quarto volumes, accompanied by twenty portfolios, each containing forty large photogravures. The work possesses great historical and ethnical value, for Mr Curtis describes and pictures the Indians in their everyday life, showing their customs, their games, and ceremonial life in a complete detail never before attempted. The foreword is by President Roosevelt, while the work is edited by Mr F. W. Hodge.

The Apaches, who at present number about 6,000, for the most part live in the White Mountain Reservation of Arizona. Though their number probably never exceeded 10,000, they were for many years the scourge of a large region in Arizona and New Mexico. The name "Apache" is one of the most notorious and widely-advertised of Indian names, but very little was known about the inner life and customs of the tribe until Mr Curtis obtained the friendship of their elders, and was by them initiated into many of their traditions and ceremonies. He had the good luck of being in the Apache country when the new "messiah craze" was at its height in 1906, and gives an interesting account of the religious ecstacy of this primitive folk. At present many of the Apaches are working for the government on the great Salt River irrigation project in Arizona.

The Navahoes, who are also described in Volume I, next to the Sioux, are the largest Indian tribe in the United States. They are self-supporting, and own large flocks and herds. They have been the least affected by civilizing influences. Mr Curtis calls the Navaho "the American Bedouin," and says he asks nothing of the government except to be unmolested in his pastoral life.

The nine tribes treated in Volume II reside within the limits of Arizona, but extend into the Mexican state of Sonora and into eastern California.

The Yuma and the Mohave, whose homes are on the banks of the mighty Colorado, are usually fine specimens

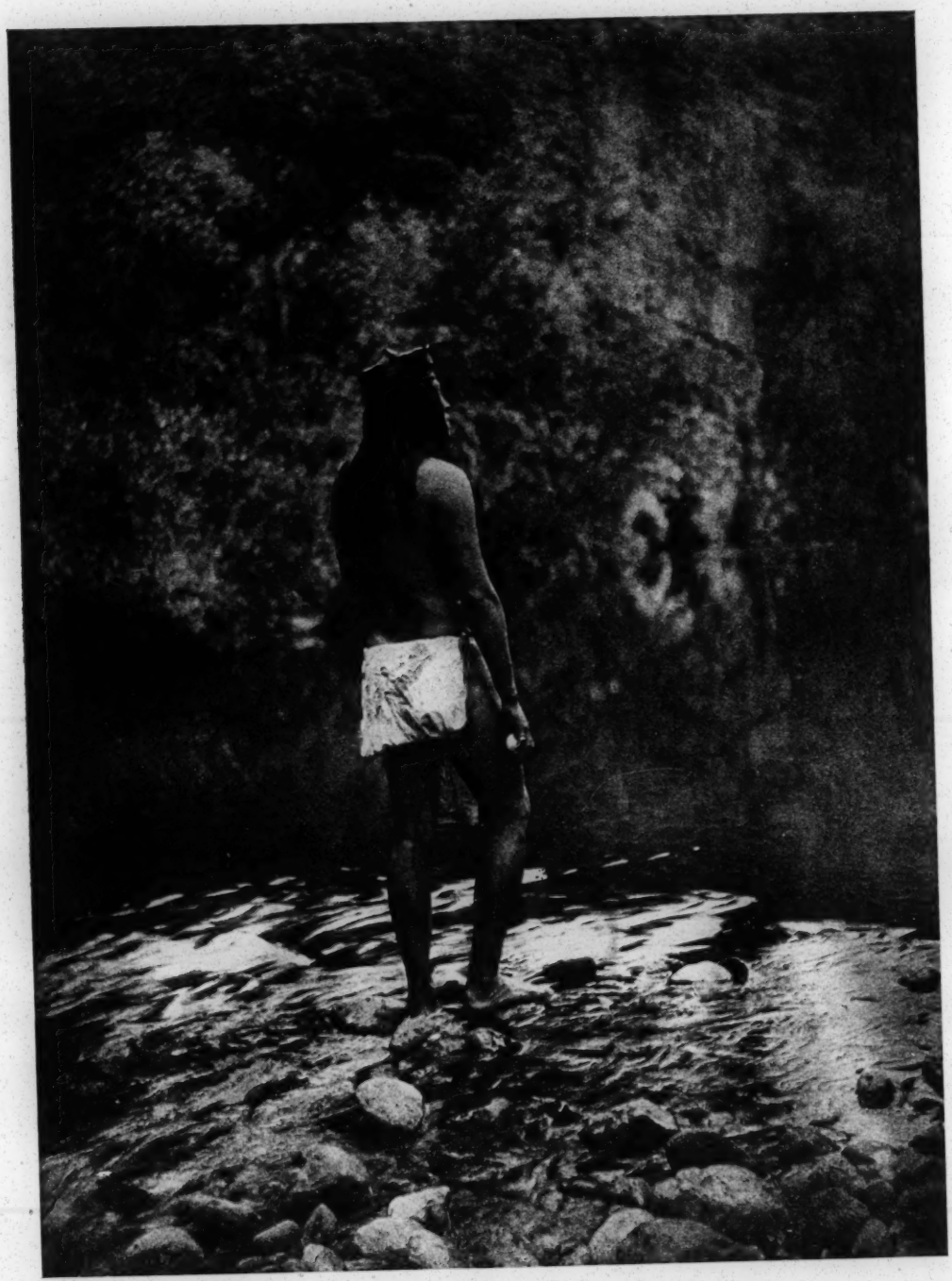


Photo and copyright by Edward S. Curtis

THE APACHE

Photo and copyright by Edward S. Curtis

CHIEF GARFIELD: JICARILLA—APACHE

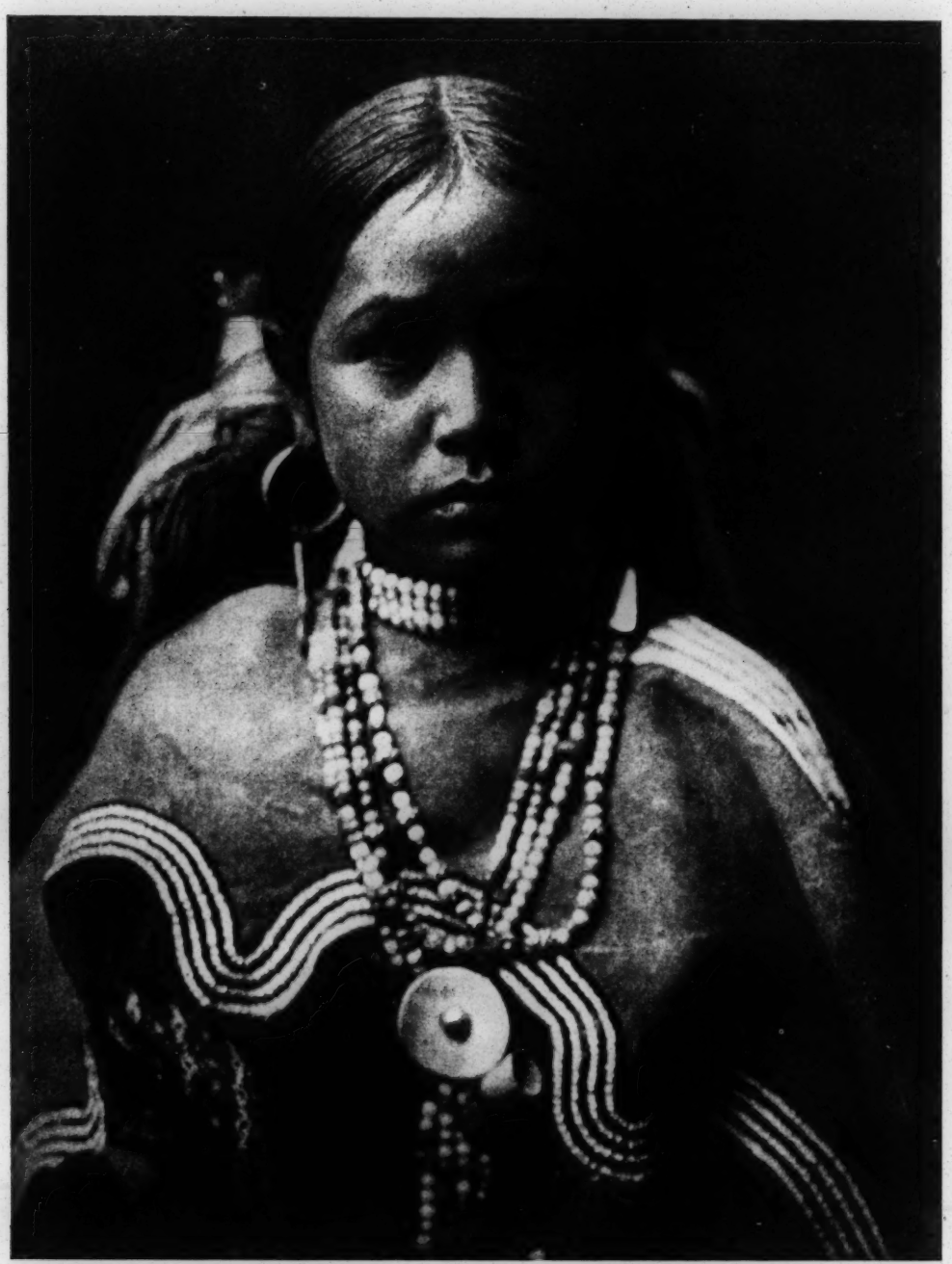


Photo and copyright by Edward S. Curtis

JICARILLA—APACHE MAIDEN

physically, being large boned, strongly built, and clear skinned. Within a short distance of them, in the high altitudes, live the Walapai, of the same family. They are the direct opposite of the river Indians—hardy mountain types, physically and mentally quick of action, for their rugged mountain home has ever demanded of them a hard fight for existence. Adjoining them, in Cataract canyon of the Colorado, are the Havasupai, also of the Yuman family, whose surroundings are truly unique. Though they cultivate small patches in their canyon home, for subsistence they depend much upon the chase, and, like the Walapai, are a wiry mountain people. The Maricopa, another Yuman tribe, who have long lived in the valley of the Gila, exhibit the effect of their Colorado river origin, both in physique and in their slowness of thought.

The Pima from earliest tradition have dwelt within the Gila drainage in southern Arizona. From one point of view they are ideal Indians—industrious, keen of mind, friendly to civilization, and tractable.

These various tribes have been broadly termed with the Pueblos, the sedentary Indians of the Southwest. Most of them came early in direct contact with Spanish missionaries, whose ministrations they received in friendly spirit, yet after more than two centuries of zealous effort little has been accomplished toward substituting the religion of the white man for that of their fathers. True, many are professed adherents of the Christian faith, but only in rare instances has an Indian really abandoned his own gods. As a rule the extent of their Christianization has been their willingness to add another god to their pantheon.

The Pimas and Yumas and their allies were the builders of those wonderful monuments of the Southwest which indicate that a great population formerly lived there, and has since been dispersed.

It is very fortunate that a man like Mr Curtis is able to make a historical record of the Indians before they have been obliterated.

BOOKS RECEIVED

Outdoor Pastimes of an American Hunter. By Theodore Roosevelt. New and enlarged edition. Pp. 420. 6¼ x 9½ inches. Illustrated. New York: Charles Scribner's Sons. 1908. $3.00.

The California Earthquake of 1906. Edited by David Starr Jordan. Pp. 360. 9 x 6 inches. Illustrated. San Francisco: A. H. Robertson. 1907. $3.50.

California and the Californians. By David Starr Jordan. Pp. 48. 7 x 5 inches. San Francisco: A. H. Robertson. 1907. $0.75.

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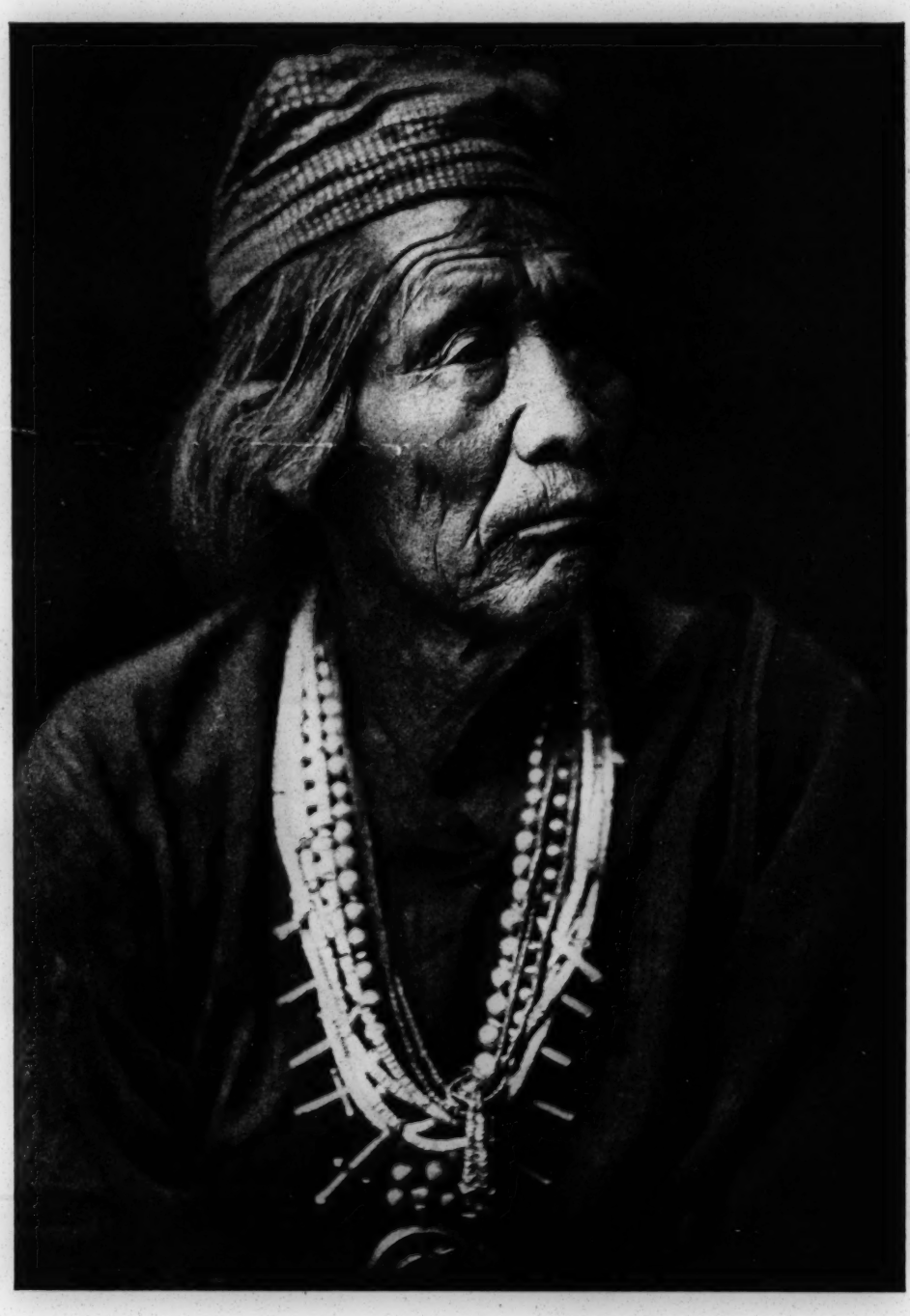

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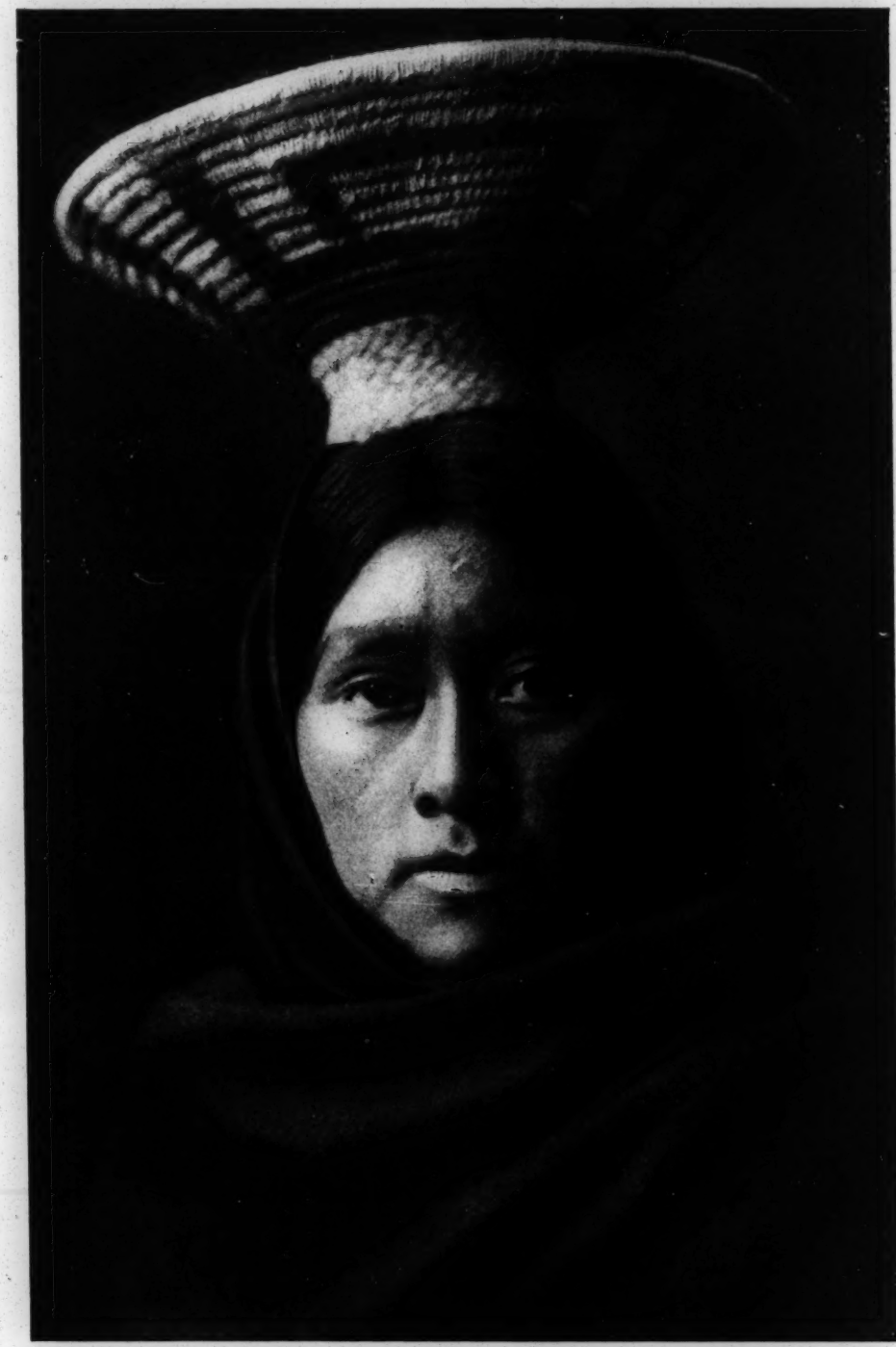

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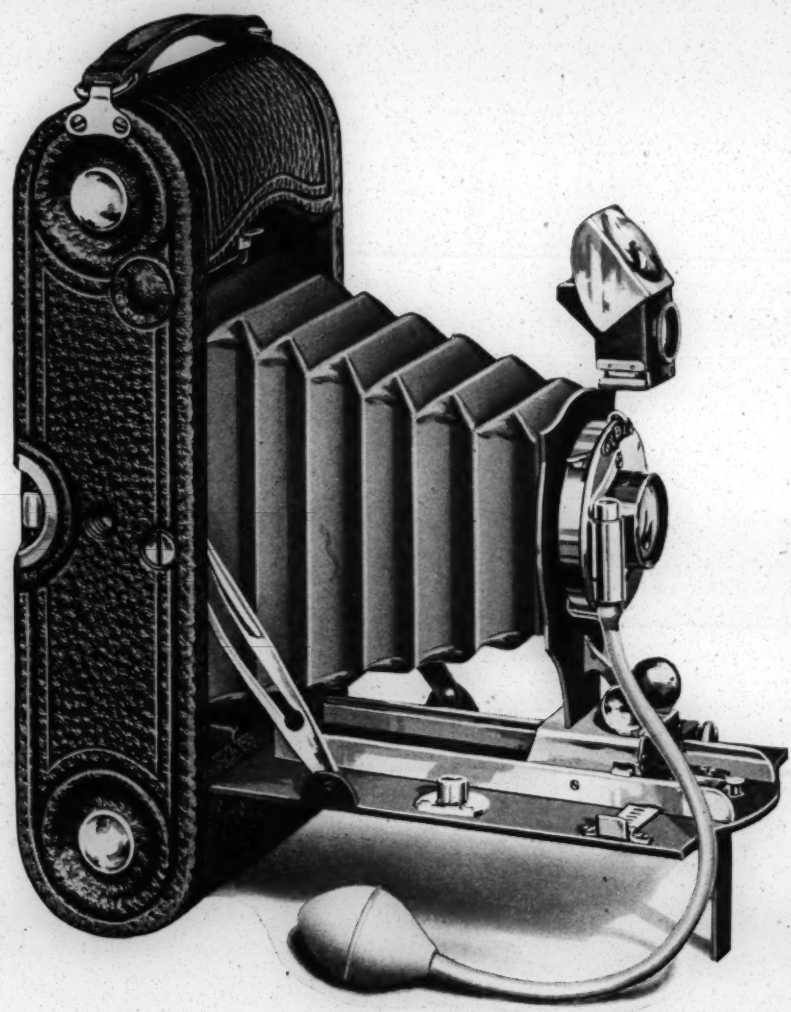

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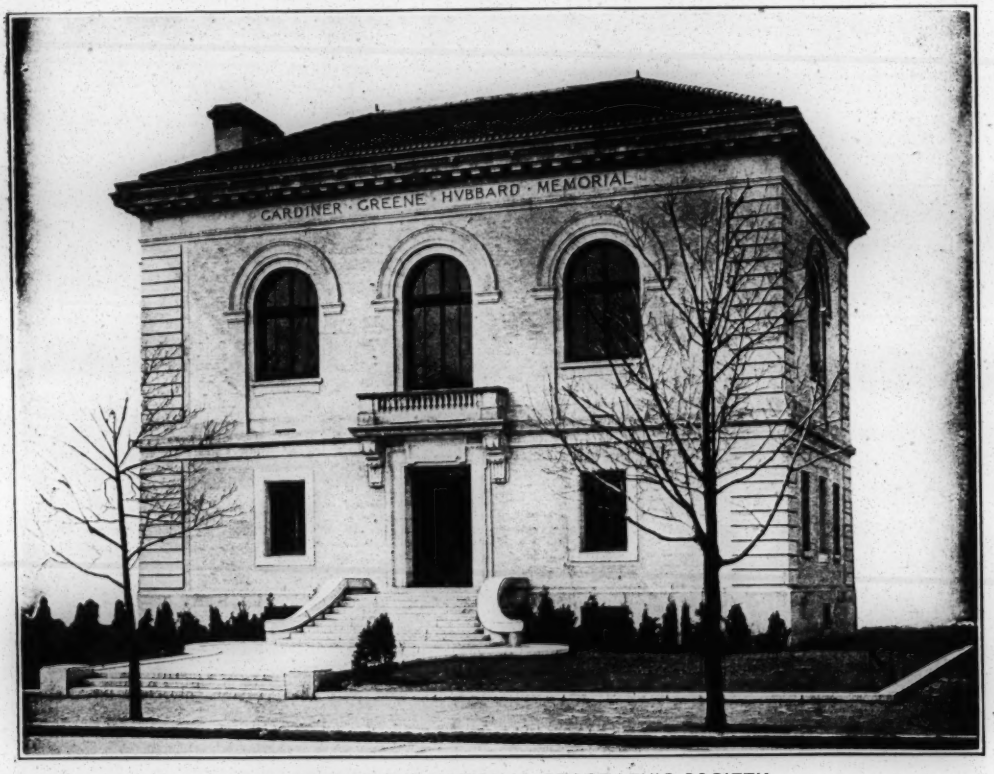

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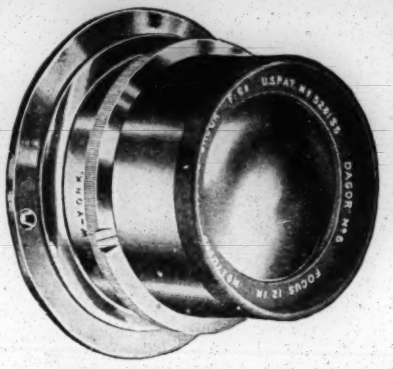

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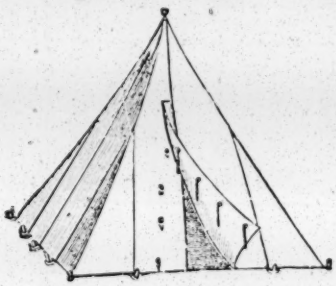

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